

App. F. IX-4

Previous References.

45B/A.

194 5-46

(Eled)

File No. 318-45-

Serial Nos. 1-2

Later References.

Eled 51-49 (5,8.)

" 275-54 (14-15, 20, 30.)

GENERAL AND REVENUE SECRETARIAT

Serial Nos. 2

Part B for

November '46

SUBJECT

Estimate for Rs. 18,29,000/- for the
rehabilitation of Swasandram Station.

Go. E. DS. 1098-109 of 30.10.46.

The Chief Electrical Engineer
Comptroller to Govt.

Auditor, Electrical Deptt.

Sanction the estimate

An
9/11

989

Letter No. 1665 dated 18th Decr. 1945 from the Chief Electrical Engineer forwards for sanction under "Depreciation fund works" an estimate for Rs. 18,29,000/- for the above works.

1) The estimate is as per actuals based on the works executed and to be executed. The Auditor, Elec. Dept. has verified the estimate with reference to the allocation and grant. The case is a schedule one and may perhaps be disposed of by circulation.

20/12/45

21/12/45

21/12/45

3) C.B.E. has submitted for an esti of Rs. 18.29 lakhs for the rehabilitation work at Shiva. Govt. had ordered the execution pending said to esti, the esti is as per actual work done & the balance still to be done. The work is to be charged to "Depreciaⁿ Funds Works". There is a provⁿ of 10 lakhs in the Elecⁿ budget of this year and outlay of this year will be met out of this grant. The esti may be said. The case may be disposed of by ^{oⁿ}.

Min^r P.W. & Dewar

21/12/45

27/12/45

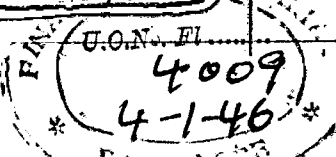
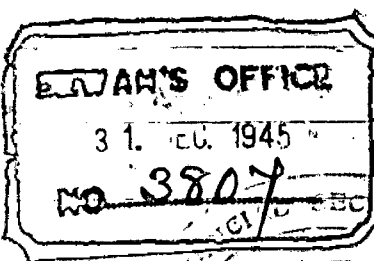
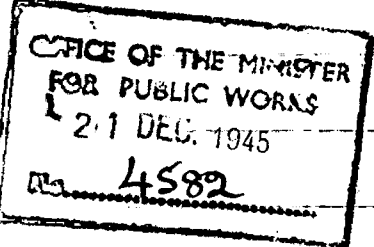
28/12/45

Thang Fin Secy

WD 0726 GPB-25,000-15-9-44

Fm Secy

21/12/45



7) To Compt w/c in favour of
remarks of any

By Nashavendur

10/7/45

360/34C
29.4.46

U.O.No. 1224 Spl. dated 29-1-1946.

8) Returned with compliments.

9) The Auditor, Electrical Department has
verified the estimate with reference to allocation
and grant. The disaster occurred in May 1944.

The rehabilitation work was commenced almost
immediately. But the department has taken nearly
an year and a half to submit the estimate which is
mostly for works already executed and as per actuals.
In the circumstances, I have no further remarks to
offer.

M. Shamaiah

Comptroller.

29/1

10) The auditor elect dept. Santosh

last week & his no. d 28.8.

1) A report from him in the matter is
enclosed.

2) The estimate sent by the CES
may be approved ~~the case~~ this is sel. matter

See El. dept. w/c

31/8/46

Dewan

13)

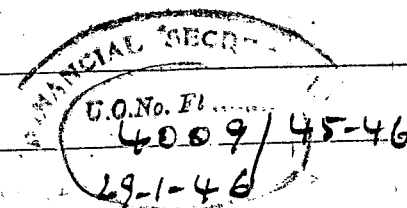
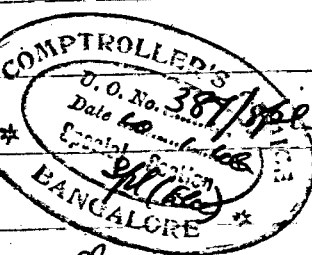
APR

10/4/46

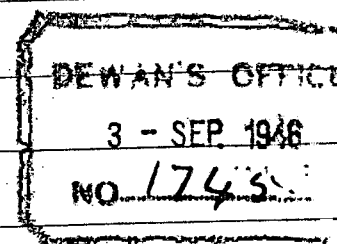
4/9

14) A The Comptroller may
be informed of the delay
in his dept.

APR



10) Please ask Auditor
the dept. to see
me with this file
12/2



General and Revenue
Secretariat

File No.

of 194

[App. F.III-2

Serial
No.

15) A note for circulation in Council is put up.

W 5/9

Secy) 16) B/ 7/8

Min^v P.W.)

17) For approval w draft.

W 9 9/ub

B/ 9/8

5) A

17 9/ub

W 17 9/ub

B/ 17/8

19) 7 copies of the circulation note are put up.

Secy)

20) B/ 18/8

W 18/9

Chief secy) w/e

21) Fav of dir.

W 19 9/ub

B/ 19/8

I.C.B.

(Circulation)

W 22/9/46

Council File No. 3271 & 2271
FOR DISPOSAL BY CIRCULATION.
W 22/9/46

Cir 3 Completed

Secy. Secy

with Compt

W 29/9/46

D.F.N

W 30/9/46

4
File No.

of 194 .

General and Revenue
Secretariat

Serial
No.

OFFICE OF THE MINISTER
FOR AGRICULTURE AND
PUBLIC WORKS
3 OCT 1946
No. 2557

10.10.46
No. C465

At L.F.R. is put in
Secy 26/10/46
Min P.W. 27/10/46

28) Two Copies of signed final note are placed in
Secy file.
18/7/10/46

29) Dewan 10/10/46
18/9/10

Handwritten notes at the bottom of the page, including "Handwritten" and "10/10/46".

W.H.N.
374

CIRCULATION NOTE.

Subject:- Estimate for the rehabilitation
of Shivasamudram Station.

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On the 19th May 1944 a disastrous stroke of lightning set in flames the entire roof of the generating station at Shivasamudram. The power and control cables and some of the generators also caught fire which resulted in great confusion among the men on duty, but, however, they luckily escaped injury. The flames spread and most of the generators, power and control cables were burnt except the bare copper and iron. The transformer station also caught fire and this damaged the switchboard wiring instruments and all the low tension switchgear. In spite of the efforts made to control the fire, it spread violently causing heavy damage,

The fire completely damaged nearly 30,000 feet of power cable of varying size, nearly 60,000 feet of 4 conductor V.I.R. control cables, all the low tension switchgear, the wiring of the switchboard and many of the instruments. Four of the large generators were damaged to a small extent. The wooden stair case in the transformer station caught fire, the solder in the high tension buses melted down and shattered some of the high tension insulators.

Rehabilitation of the Shivasamudram generating station was immediately taken up

and a rapid progress has been achieved. The Chief Electrical Engineer has now sent an estimate for Rs. 18,29,000/- for the entire rehabilitation work and it is based on the actuals as against the original estimated rough cost of Rs. 25 lakhs.

The estimate provides for, besides the rehabilitation work, (1) a net work of ground wires and the roof of the station with the establishment of best grounds (2) replacement of all possible inflammable material in the Station with non-inflammable materials and (3) installation of multisfyre type of fire protection. ~~The Power House will thus become an up-to-date one with adequate protection against fire.~~

The Chief Electrical Engineer hopes that after all the works contemplated in the estimate are completed, the station will have been overhauled and made an up-to-date Power House with all the adequate fire protective equipments.

The proposal to sanction the estimate as submitted by the Chief Electrical Engineer, has been agreed to by the Minister for Agriculture and Public Works and the Dewan, and it requires the concurrence of the other Ministers of Council.

The case is for disposal by circulation.

17/9
ub

17/9

Subject:- Estimate for the rehabilitation
of Sivasamudram Station.

On the 19th May 1944 a disastrous stroke of lightning set in flames the entire roof of the generating station at Sivasamudram. The power and control cables and some of the generators also caught fire which resulted in great confusion among the men on duty, but, however, they luckily escaped injury. The flames spread and most of the generators, power and control cables were burnt except the bare copper and iron. The transformer station also caught fire and this damaged the switchboard wiring instruments and all the low tension switchgear. In spite of the efforts made to control the fire, it spread violently causing heavy damage.

The fire completely damaged nearly 30,000 feet of power cable of varying size, nearly 60,000 feet of 4 conductor V.L.B. control cables, all the low tension switchgear, the wiring of the switchboard and many of the instruments. Four of the large generators were damaged to a small extent. The wooden stair case in the transformer station caught fire, the solder in the high tension buses melted down and shattered some of the high tension insulators.

Rehabilitation of the Sivasamudram generating station was immediately taken up

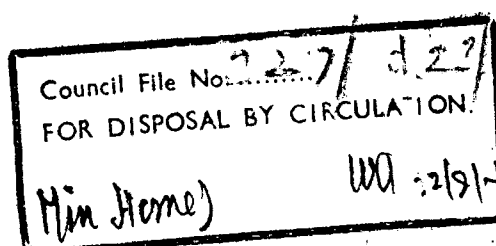
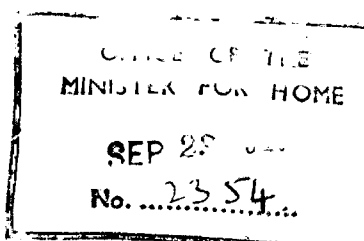
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The estimate provides for, besides the rehabilitation work, (1) a net work of ground wires and the roof of the station with the establishment of best grounds (2) replacement of all possible inflammable material in the Station with non-inflammable materials and (3) installation of multisfyre type of fire protection. ~~The Power House will then become an up-to-date one with adequate protection against fire.~~

The Chief Electrical Engineer hopes that after all the works contemplated in the estimate are completed, the station will have been overhauled and made an up-to-date Power House with all the adequate fire protective equipments.

The proposal to sanction the estimate as submitted by the Chief Electrical Engineer has been agreed to by the Minister for Agriculture and Public Works and the Dewan, and it requires the concurrence of the other Ministers of Council.

The case is for disposal by circulation.



K. J. R. H. 19/9/46
6/10/46

CIRCULATION NOTE.

Subject:- Estimate for the rehabilitation
of Sivasamudram Station.

On the 19th May 1944 a disastrous ~~stroke~~ stroke of lightning set in flames the entire roof of the generating station at Sivasamudram. The power and control cables and some of the generators also caught fire which resulted in great confusion among the men on duty, but, however, they luckily escaped injury. The flames spread and most of the generators, power and control cables were burnt except the bare copper and iron. The transformer station also caught fire and this damaged the switchboard wiring instruments and all the low tension switchgear. In spite of the efforts made to control the fire, it spread violently causing heavy damage.

The fire completely damaged nearly 30,000 feet of power cable of varying size, nearly 60,000 feet of 4 conductor A.I.R. control cables, all the low tension switchgear, the wiring of the switchboard and many of the instruments. Four of the large generators were damaged to a small extent. The wooden stair case in the transformer station caught fire, the solder in the high tension buses melted down and shattered some of the high tension insulators.

Rehabilitation of the Sivasamudram generating station, was immediately taken up

up and a rapid progress has been achieved. The Chief Electrical Engineer has now sent estimate for Rs 18.29,000/- for the entire rehabilitation work and it is based on the actuals as against the original estimated rough cost of Rs 25 lakhs.

The estimate provides for, besides the rehabilitation work, (1) a net work of ground wires and the roof of the station with the establishment of test grounds (2) replacement of all possible inflammable material in the Station with non-inflammable materials and (3) installation of mulsifyre type of fire protection. The Power House will thus become an up-to-date one with adequate protection against fire.

The Chief Electrical Engineer hopes that after all the works contemplated in the estimate are completed, the station will have been overhauled and made an up-to-date Power House with all the adequate fire protective equipments.

The proposal to sanction the estimate as submitted by the Chief Electrical Engineer has been agreed to by the Minister for Agriculture and Public Works and the Dewan, and it requires the concurrence of the other Ministers of Council.

The case is for disposal by circulation.

Council File No. 327 / d 22
FOR DISPOSAL BY CIRCULATION.
Min Ed") W 22/9/46

11

CIRCULATION NOTE.

Subject:- Estimate for the rehabilitation
of Sivasamudram Station.

On the 19th May 1944 a disastrous ~~stroke~~ stroke of lightning set in flames the entire roof of the generating station at Sivasamudram. The power and control cables and some of the generators also caught fire which resulted in great confusion among the men on duty, but, however, they luckily escaped injury. The flames spread and most of the generators, power and control cables were burnt except the bare copper and iron. The transformer station also caught fire and this damaged the switchboard wiring instruments and all the low tension switchgear. In spite of the efforts made to control the fire, it spread violently causing heavy damage.

The fire completely damaged nearly 30,000 feet of power cable of varying size, nearly 60,000 feet of 4 conductor V.I.R. control cables, all the low tension switchgear, the wiring of the switchboard and many of the instruments. Four of the large generators were damaged to a small extent. The wooden stair case in the transformer station caught fire, the solder in the high tension buses melted down and shattered some of the high tension insulators.

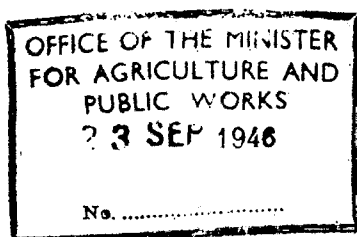
Rehabilitation of the Sivasamudram generating station was immediately taken up

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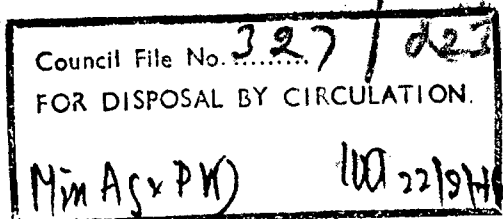
The estimate provides for, besides the rehabilitation work, (1) a net work of ground wires and the roof of the station with the establishment of best grounds (2) replacement of all possible inflammable material in the Station with non-inflammable materials and (3) installation of multisfyre type of fire protection. ~~The Power House will thus become an up-to-date one with adequate protection against fire.~~

The Chief Electrical Engineer hopes that after all the works contemplated in the estimate are completed, the station will have been overhauled and made an up-to-date Power House with all the adequate fire protective equipments.

The proposal to sanction the estimate as submitted by the Chief Electrical Engineer has been agreed to by the Minister for Agriculture and Public Works, and the Dewan, and it requires the concurrence of the other Ministers of Council.



7/8/46
The case is for disposal by circulation.



Kw/ Shi
19/9/46
23/9/46

13

CIRCULATION NOTE.

Subject:- Estimate for the rehabilitation
of Sivasamudram station.

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Rehabilitation of the Sivasamudram
generating station was immediately taken up

23.

23/9,

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The estimate provides for, besides the rehabilitation work, (1) a new work of ground wires and the roof of the station with the establishment of best grounds 2) replacement of all possible inflammable material in the Station with non-inflammable materials and (3) installation of multisfyre type of fire protection. ~~The Power House will thus become an up-to-date one with adequate protection against fire.~~

The Chief Electrical Engineer hopes that after all the works contemplated in the estimate are completed, the station will have been overhauled and made an up-to-date Power House with all the adequate fire protective equipments.

The proposal to sanction the estimate as submitted by the Chief Electrical Engineer has been agreed to by the Minister for Agriculture and Public Works and the Dewan, and it requires the concurrence of the other Ministers of Council.

The case is for disposal by circulation.

23/9.

23/9/46

Council File No. 327/2
FOR DISPOSAL BY CIRCULATION.

Min Law)

22/9/46

Subject:- Estimate for the rehabilitation
of Sivasamudram station.

. On the 19th May 1944 a disastrous stroke of lightning set in flames the entire roof of the generating station at Sivasamudram. The power and control cables and some of the generators also caught fire which resulted in great confusion among the men on duty, but, however, they luckily escaped injury. The flames spread and most of the generators, power and control cables were burnt except the bare copper and iron. The transformer station also caught fire and this damaged the switchboard wiring instruments and all the low tension switchgear. In spite of the efforts made to control the fire, it spread violently causing heavy damage.

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Rehabilitation of the Sivasamudram generating station was immediately taken up

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The Chief Electrical Engineer hopes that after all the works contemplated in the estimate are completed, the station will have been overhauled and made an up-to-date Power House with all the adequate fire protective equipments.

The proposal to sanction the estimate as submitted by the Chief Electrical Engineer has been agreed to by the Minister for Agriculture and Public Works and the Dewan, and it requires the concurrence of the other Ministers of Council.

The case is for disposal by circulation.

OFFICE OF THE MINISTER
FOR REVENUE

No. 2288

Date 22.8.46

Council File No. 327/2 22/9/46
FOR DISPOSAL BY CIRCULATION.

Min Rev & Com^m)

100
22/9/46

M. V. S. -
h
m/8

K. P. S. S.
19/9/46

1705

Agriculture &
Final Note by the Minister for Public Works.

Subject.— Estimate for the rehabilitation of Sivasamudram Station.

106 D

On the 19th May 1944 a disastrous stroke of lightning set in flames the entire roof of the generating station at Sivasamudram. The power and control cables and some of the generators also caught fire which resulted in great confusion among the men on duty, but, however, they luckily escaped injury. The flames spread and most of the generators, power and control cables were burnt except the bare copper and iron. The transformer station also caught fire and this damaged the switchboard wiring instruments and all the low tension switchgear. In spite of the efforts made to control the fire, it spread violently causing heavy damage.

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Pu D
'S'

Rehabilitation of the Sivasamudram Generating Station was immediately taken up and a rapid progress has been achieved. The Chief Electrical Engineer has now sent an estimate for Rs. 18,29,000/- for the entire rehabilitation work and it is based on the actuals as against the original estimated rough cost of Rs. 25 lakhs.

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The Chief Electrical Engineer hopes that after all the works contemplated in the estimate are completed, the station will have been overhauled and made an up-to-date Power House with all the adequate fire protective equipments.

Para 13
J NSE 'B'

The proposal to sanction the estimate as submitted by the Chief Electrical Engineer has been agreed to by the other Ministers of Council and the Dewan. I solicit the gracious sanction of His Highness thereto.

Camp - Mysore,
5th October 1946.

L. S. S. S. S. S.
Minister for Agriculture
and Public Works.

Record of Cases submitted for the Orders of
His Highness the Maharaja.



Subject.

Proposal to sanction the estimate for
Rs 18,29,000/- for the rehabilitation of Siva-
samudram Station.

373

Order.

FW.
14/10/46.

30) Chief Secretary

ARU
17/10.

31) *WJ*
22/10/46

989
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0327

SUBJECT:—

Proposal to sanction the estimate for Rs. 18,29,000/- for the rehabilitation of Sivasamudram Station.

32)
988ne & circ.
Kw/m to 46
Raj 24/10

(*)

14. All urgent or confidential files returned with His Highness' orders may, in the absence of instructions or indications to the contrary, be ordinarily circulated to the Ministers for perusal after the issue of orders.

16. The Secretaries concerned should see that orders in the cases referred to above are issued at once and that the files are returned immediately after, to the Chief Secretary for circulation to the Ministers.

17. In all other cases, the files will first be circulated to the Ministers at Headquarters and then sent to the Secretariat concerned for the issue of orders.

Circulated to Council of Ministers for perusal of His Highness' orders before/after issue of orders. (Vide Rules 14, 16 and 17 of the Subsidiary Rules of the Mysore Government Business Rules.) (*)

W. D. M. N. S.
Chief Secretary to Government.
22/10/46

Through the Secretary to Government,

Electrical.....Department.

2934
5.11.46

1. Minister for Education & Public Health.

3770

2. Minister for Law.

3318

3. Minister for Agriculture and Public Works.

2.11.46

3092

4. Minister for Home.

4.11.46

3418

5. Minister for Revenue and Communications.

4/11/46

"B"
7/11 7/11

7/11

7.11.46

Secretary to Government,
Railways & Elec. Department,
(with compliments)

7/11 6/11/46

Serial
No.989
Secd

33) A draft lg & is put up for approval

26/10 MC 26/10

Secy)

34) BK/

26/10

35) Issue

BK/ 28¹⁰ 26BK/ 28¹⁰ 26

Issued in MD. EDS 1098-100/Serial 18-45-2
dated 30th October 1946. To the Chief
Electrical Engineer, the Controller
to Govt. and the Auditor, Serial
Dept, Sanctioning the estimate for
Rs. 18,29,000.

36) The file will now be sent to
the Chief Secretary for circulation.

31/10 MC 31/10

(Chief Secy.)
W.C.

- for circulation

BK/ 1/11

BK.

21/11/46.

2662 318-45-1

C.F. No. 46]

GOVERNMENT OF MYSORE

No. 16658
Encls.

OFFICE of the Chief Electrical Engineer
to the Government of Mysore,
BANGALORE
Date 18th DEC. 1945

3 sets 3 upon
+ 3 sets 3 estimate

To

The Secretary to the Government of
His Highness the Maharaja of Mysore,
Electrical Department, BANGALORE.

Sir,

REHABILITATION OF SIVASAMUDRAM STATION.

I have the honour to enclose herewith an estimate, amounting to Rs18,29,000/- for the Rehabilitation of Sivasamudram Station and request you to kindly obtain and communicate sanction of Government therefor at an early date. As per orders of Government the works are being carried out pending sanction to the estimate, and the detailed estimates herewith submitted cover the items of works that have already been executed and to be executed to bring back the Station to its normal working condition.

The work is chargeable to "Depreciation Fund Works" and for the outlay to be incurred on this work during the current year, there is a budget provision of Rs10,00,000/- under item No.30 of the Electrical Depreciation Fund for 1945-46.

RECEIVED AT DEPT. OF MYSORE
BANGALORE
Rec No. 989
Date 20/12/1945

MH-MRA-MA.

I have the honour to be,
S i r,
Your most obedient servant,

K. K. Nayana
Chief Electrical Engineer.

P.T.O.

Auditor's Certificate.

Verified with reference to the allocation
and the grant.

J. Venkataswamy

AUDITOR, 15/12
Electrical Department

In Reply Refer to

No. 155.

Enclo. 1al.

3

GOVERNMENT OF MYSORE,
ELECTRICAL DEPARTMENT.

THE ELECTRICAL AUDIT AND ACCOUNTS OFFICE,

Bangalore, 28th August, 1946.

(MYSORE, S. INDIA.)

Resubmitted with the following particulars as per instructions received on 27-8-1946 in the Financial Secretary's Chambers:

The outlay incurred to end of July 1946 against the several items detailed in the Abstract of the Estimates working up to Rs.18,29,000 submitted by the Chief Electrical Engineer in connection with the Rehabilitation of Sivamudram Generating Station etc. amounts to Rs.15,72,700/-

as per details furnished in the margin. Further outlay of

Item Nos.	Amount.	*	about Rs.1,00,000 (one lakh)
1	Rs.75,070.	*	on account of certain
2	12,78,994.	*	machinery which are still
3	1,36,480.	*	due to arrive from Calcutta
4	34,711.	*	and final debts on comple-
5	15,037.	*	tion of the Building and
6	10,648	*	other Minor Works, is ex-
7	15,700	*	
8	6,060	*	
	-----	*	
	15,72,700	*	

pected to be incurred, as ascertained from the Chief Electrical Engineer.

(K)
The above figure is exclusive of the sum of Rs.1,76,393/- written off, as per G.O. No.EDS.1939 dated 6-1-1945, on account of the cost of Stores, and Food Stuffs etc. which were destroyed.

1946
GOVERNMENT OF MYSORE
B

M. Rajanama
AUDITOR-I/c, 28/8/46
Electrical Department.

THE SECRETARY, ECONOMIC DEPARTMENT

1st August 1945

resubmitted with the following particulars as per

Instructions received on 27-8-1945 in the Financial Secre-
tary's Chambers:

The outlay incurred to end of July 1945 against the

several items detailed in the Abstract of the Estimates

working up to Rs. 18,29,000 submitted by the Chief Electrical

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as per details furnished in the margin. Further outlay of

Item Nos.	Amount.	
1	Rs. 75,070.	on account of certain
2	12,78,994.	machinery which are still
3	1,36,480.	due to arrive from Calcutta
4	34,711.	and final debts on comple-
5	15,037.	tion of the Building and
6	10,648.	other Minor Works, is ex-
7	15,700.	
8	8,080.	
	15,72,700	

pected to be incurred, as ascertained from the Chief Elec.

Engineer.

The above figure is exclusive of the sum of Rs. 1,76,393/-

written off, as per No. 112.100 dated 1-1-1945, on ac-

count of the cost of stores, and Food stuffs etc. which were

destroyed.

1234-100
Economic Department

Report to accompany the estimate for Rehabilitation of Sivasamudram Station.

=====

An unprecedented disaster overtook Sivasamudram Power House suddenly on the evening of the 19th May 1944. A twin stroke of lightning discharged itself on the roof of the Generating Station thus spreading its wrath in setting a-flame the entire roof of the 460 feet long Generating Station wooden ceiling and also all the power and control cables and some of the Generators. The sudden bursting of this equipment and the roof into flames threw the handful of men that were in attendance at the time for normal maintenance into confusion and with the greatest difficulty they escaped from the burning building alive. Meanwhile, the flames consumed most of the Generators and all the power and control cables; except for the bare copper and iron nothing was left. The flames spread from the Generating Station Lean-to into the Transformer Station damaging the Switchboard wiring and the instruments and all the Low Tension Switchgear. All attempts by the men that gathered subsequent to the incident to control the fire were fruitless and the fire spread violently causing widespread damage.

Immediately after the occurrence the Station Operators de-energised the plant and began fighting the fire fruitlessly. The fire consumed nearly 30,000 feet of power cable varying in size from 500,000 C.M. to a million and half C.M. and nearly 60,000 ft. of 4 conductor V.I.R. Control Cables and all the Low Tension Switchgear and all the wiring of the Switchboard and many of the instruments. The brighter side of the picture was that four of the large Generators were damaged to a small extent and the fire which reached the Transformer Bay got extinguished by the time it reached there. The wooden stair-cases in the Transformer Station caught flames and in their furious burning melted down the solder in all the High Tension Buses, shattered some of the High Tension Insulators, but luckily the oil in the Oil Circuit Breakers did not catch flames. Due to the pluck of the men in attendance the oil in the High Tension Transformers was drained off into the river thus avoiding complete destruction of the Station. Probably this would have put the Station out of commission for not less than 36-48 months.

The estimate provides for rewinding all the Generators that were damaged and repairs to the Generators that were slightly damaged, overhaul and replacement of all white metal and brass portions of the Hydraulic portion of the equipment which had been melted and badly scoured. It provides for (1) replacement of varnished cambric cables by lead covered paper insulated High Tension Cables of appropriate pot heads and new type of high rupturing capacity Oil Circuit Breakers, (2) replacement of oil in the Transformers by fresh oil and overhauling of the Oil Circuit Breakers, (3) replacement of all damaged High Tension Bushings and re-conditioning of the Station, (4) complete replacement of the Switchboard with new wiring, and (5) replacement of all the damaged instruments and instrument Transformers.

The provisions made are meant to cover such of the repairs that were conducted locally and replacement of parts that could not be made locally and which had to be obtained from foreign countries. The damage was originally estimated to cost about Rs 25 lakhs, but on a careful consideration and by extreme economy exercised in the works that were carried out, the estimate has been reduced to Rs.18,29,000/-

In this connection it may be mentioned that this Rehabilitation has brought about the execution of the following two works which necessarily had to be done during the subsequent months, viz.

replacement of the low rupturing capacity Low Tension Oil Circuit Breakers that were installed several years ago by high rupturing capacity ones necessitated by the proposed tieing in of Sivasamudram and Shimshapura with Jog costing about Rs2½ lakhs.

The Regulators that were in service from a very long time were giving considerable trouble and were causing anxiety on various important occasions. Quotations for replacing these Regulators had been called for and the estimates are under submission.

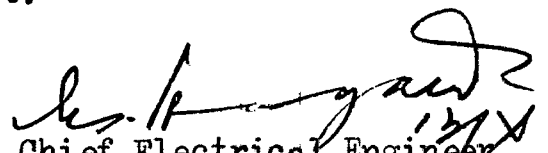
The oil in the Transformers had developed acidity having been in service for the last nearly 20 years. The question of replacement was under consideration when the accident occurred and now all the oil in the Transformers has been replaced by good oil which is bound to serve us for several years to come.

Taking into effect the value of the above works which necessarily had to be done in the course of 1944-45 we may safely say that the actual cost incurred for Rehabilitation due to the accident is Rs13 lakhs. Taking the magnitude of the accident into consideration I venture to state that the expenditure incurred is small for which we have to be thankful to Almighty God for having saved from the fire some essential equipment, the cost of replacement of which would not only have been heavy but would have kept the Station idle and unserviceable for several years.

In this connection it may not be out of place if I mention that the damage indicated to most sanguine observers that the Station could not be put back into commission earlier than six months. Engineers who visited the place were of the same opinion. But the staff of the Department deputed for the work set about the business of Rehabilitation in such earnest that with the help of the various organisations who voluntarily offered the same, it was possible to service the Station partially within about five weeks from the date of the accident, and within eight weeks the Station was in a position to carry a load of nearly 30,000 K.W. The temporary repairs that were carried out on an emergent basis have stood very well for the past year and they are gradually being replaced by permanent repairs as and when material is received from foreign countries.

Further, the estimate provides for a net work of ground wires and the roof of the Stations - both Generating and Transformer, with the establishment of best grounds that could be secured and replacement of all possible inflammable material in the Station like wood, etc., with non-inflammable material as well as lay-out of the power cables as a modern Station with fire segregation compartments to localise the fire in case one to occur.

Further, the estimate provides for also installation of Mulsifyre type of fire protection. The Generators are also being equipped with travelling wave surge ~~observers~~ to prevent damage to by travelling waves by lightning. In short, the Station, after all the works contemplated in the estimate are completed, will have been overhauled and made an up-to-date Power House with foreseeable adequate fire protective equipment.


Chief Electrical Engineer
to the Govt. of Mysore.

MH-DMJ.
13-10-45.

Sivasamudram Section.

Rehabilitating the Hydraulic Equipment, etc., at Generating Station, Sivasamudram.

Sl.No.	Work Orders	Particulars.	Amount.
1	A-11	Rehabilitating No.11 Unit of 9000 H.P. Boving's Turbine ..	8,236 0 0
2.	A-11	Rehabilitating No.10 Unit of 9000 H.P. Bovings Turbine....	3,015 0 0
3.	A-11-C	Rehabilitating No.9 Unit of 5600 H.P. Escheer Wyss Turbine. ..	3,138 0 0
4.	A-11	Rehabilitating No.8 Unit of 9000 H.P. Boving's turbine. ..	3,076 0 0
5.	A-11-a.	Rehabilitating No.7 Unit of 5600 H.P. Boving's Turbine ..	3,368 0 0
6.	A-11-b.	Rehabilitating No.6 Unit of 5600 H.P. Boving's Turbine ..	3,663 0 0
7.	A-11	Rehabilitating No.5 unit of 5600 H.P. Boving's Turbine. ...	3,348 0 0
8.	A-11	Rehabilitating No.4 Unit of 5600 H.P. Boving's Turbine ..	3,927 0 0
9.	A-11	Rehabilitating No.3 Unit of 9000 H.P. Boving's Turbine. ..	3,290 0 0
10.	A-11-d.	Rehabilitating No.2 Unit of 5600 H.P. Bovings Turbine. ..	6,013 0 0
11.	A-11	Rehabilitating 10 & 20-ton cranes and the track up to No.9 unit in Generating Station and also the 10-ton crane in top station. ..	511 0 0
12.	A-11	Running air line to Generating Station ..	482 0 0
13.	A-11	Installing a blower and overhauling two other blowers. ..	754 0 0
14.	A-30	Rehabilitating the crane track from No. 9 Unit to No.11 Unit in Gen.Station ..	2,362 0 0
15.	A-11	Rehabilitating and installing a new Electric Motor & Electric equipment for the 45-ton Electric Crane. ..	14,916 0 0
16.	A-27	Running pipe line from Forebay to gravity tank on hill side. ..	253 0 0
17.	A-11	Installing 5-ton traversing cranes Govt. Stores, top & bottom of trolleys track. ..	9,345 0 0
18.	A-10	Transporting heavy materials on material track both from Govt.Stores on top to bottom Station and from bottom Station to stores on top. ..	10,800 0 0
19.	A-11	Rehabilitating the Exciter turbines in Generating Station. ..	1,571 0 0

BF.

20. A-11	Running Fire Hydrants to Generating & Transformer Stations.	..	6,230	0	0
21. A-11	Running Fire Hydrants to Sir.K.Sheshadri Iyer's Power Station on top and ground floors.	..	7,019	0	0
GRAND TOTAL			Rs.1,08,317	0	0

Rs.1,08,317-0-0.

CB.YSG.

Crus 12/9/45
GENERAL SUPDT: OF GENERATION.

Certified that I and my gazetted assistants have visited the spot and have prepared the estimate on current market rates providing for the most economical and safe way of executing the work. The ledger & market rates are the same -

Crus
12/9/45

M. R. Arora
Chief Electrical Engineer

Government of Mysore.

Sivasamudram Section.

Electrical Department.

Rehabilitation works of No.11 unit of 9000 B.F.U.
Work Order No.A-11.

Names of materials, etc.	Unit.	Qty.	Rate.	Amount.
1. Compensator for V.K.H. Governor.	No.	1	902-14-0	902-14-0
2. Bye-pass valve 7" dia.	"	1	982- 0-0	982- 0-0
3. Diaphragm for 9000 H.P.turbine	"	1	794- 8-0	794-8- 0
4. Cone for runner of 9000 H.P.turbine	"	1	145- 0-0	145- 0-0
5. Tachometer 75 to 500 R.P.M.	"	1	70- 0-0	70- 0-0
6. Oil pressure gauge 0 to 330 lbs.	"	1	25- 9-0	25- 9-0
7. Vacuum gauge	"	1	26- 3-0	26- 3-0
8. Bourdon pressure gauge 0 to 500 lbs."	"	1		
9. Belting leather laminated 4"	Ft. 62'3"		5- 6-6	336- 9-3
10. -do- -do- 2"	"	7'	2- 8-4	17-10-4
11. Oil Cy2.	Glns.	168	2-7-10	418- 4-0
12. Red star spindle oil	"	190	5- 0-0	950- 0-0
13. Collars leather special 'V'with rubber rings.	Nos.	26	13- 0-0	338- 0-0
14. -do- 'U' with rubber rings.	"	26	15- 0-0	390- 0-0
15. Packing Klingrite 1/16"	Lbs.	42	8- 8-0	357- 0-0
16. -do- 1/32"	"	6	2-8-10	15- 5-0
17. Packing fibre 1/32"	"	6-	3-14- 0	23- 4-0
18. -do- 1/16"	"	22	1-14-1	41-5-10
19. Packing round rubber 11 m.m.	Ft.	23	0-14-4	20- 9-8
20. -do- 6 m.m.	"	30	0-11-2	20-15-0
21. Miscellaneous materials such as kerosen oil, petrol, waste cotton, emery cloth, cheese cloth, grease, files, etc.			L. . .	600- 0-0
22. Workshop charges.			"	100- 0-0
23. Labour charges			"	1,000- 0-0
24. Stock Incidentals at 6 1/2%			..	410-15-0
25. Contingencies			L. . .	250- 0-0
			Total.	Rs.8,236- 0-1

Or Say Rs.8,236/-.

(A)

CBC-GH.

11/8/12/9
General Supdt.of Generation.

M. R. Arora
Chief Electrical Engineer.

Estimate No. 2

Government of Mysore.

Electrical Department.

Sivasamudram Section.

Rehabilitation works of No.10 Unit of 9000 B.H.P. Boving's
Turbine - W.O.11.

Names of materials.	Unit.	Qty.	Rate.	Amount.
1. Pump pinion for V.K.H. Governor	No.	1	325-15-0	325-15-0
2. Vacuum gauge	"	1	25-15-0	25-15-0
3. Oil pressure gauge 0-300 lbs.	"	1	25- 7-0	25- 7-0
4. Belting leather laminated 4"	Ft.	52	6- 2-0	318- 8-0
5. -do- -do- 2"	"	7	2- 8-4	17-10-4
6. Oil Cy.2	Glns.	168	2-7-10	418- 4-0
7. Red star spindle oil	"	100	5- 0-0	500- 0-0
8. Packing Klingrite 1/16"	lbs.	11 1/2	6-14-0	77- 6-0
9. -do- 1/32"	"	5	4- 9-2	22-13-10
10. Miscellaneous materials such as kerosene oil, petrol, waste cotton, emery paper, sand paper, etc.			L.S.	400- 0-0
11. Labour charges			"	350- 0-0
12. Stock Incidentals 6 1/2%				433- 4-0
			Total.	2,915- 3-2
Contingencies.			~~Or say Rs.2,915/-~~	200- 0-0
				Rs.3,015- 3-2
			Or say Rs.3,015/-	

CBC-GH.

M. A. Arora
Chief Electrical Engineer.

12/8/12/9
Genl. Suptd. of Generation.

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Estimate no 3.

Government of Mysore.

Sivasamudram Section.

Electrical Department.

Rehabilitation works of No.9 unit of 5600 BHP Escnerwyssam turbine.
W.O.No.A-11(c).

Names of materials, etc.	Unit.	Qty.	Rate.	Amount
1. Leather collars for R.V.stem	No.	1	18- 3-0	18- 3-0
2. -do- main valve piston	"	2	61-11-0	123- 6-0
3. -do- top stem	"	1	6- 5-0	6- 5-0
4. -do- bottom stem	"	1	12- 5-0	12- 5-0
5. Babbi metal	lbs.	224	2- 7-5	551-13-4
6. Laminated leather belting 5"	Ft.	18'6"	6- 6-0	118- 3-8
7. -do- -do- 2"	"	28'3"	2- 7-4	69- 7-2
8. Oil Cy.2	glns.	84	3- 07	255- 1-0
9. Red star spindle oil	"	45	5- 1-7	229- 7-3
10. Packing round rubber 9 m.m.	Ft.	46	1-3-10	57- 0-4
11. Packing triplex	"	23	2- 8-6	58- 7-4
12. Packing Klingrite 1/32"	Lbs.	10	4- 8-0	45- 0-0
13. Rubber rings for leather collars of wicket spindles.	No.	16	1-13-0	29- 0-0
14. Miscellaneous materials such as kerosene oil, petrol, waste cotton, emery cloth, cheese cloth, grease etc.			L. S.	375- 0-0
15. Workshop charges.			L. S.	110-10-0
16. Labour charges			"	850- 0-0
17. Stock incidentals at 6 1/2				128-11-6
			Total.	3,038- 0-4
Contingencies			L.S.	100- 0-0
			Grand total.	3,138- 0-4
			Or Say Rs.3,138/-	✓

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CBC-GH.

M. R. Arge
Chief Electrical Engineer.

18/8/19
Genl. Supdt. of Generation.

Government of Mysore.

Electrical Department.

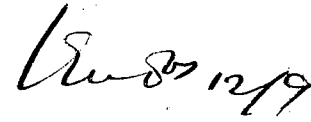
Sivasamudram Section.

Rehabilitation works of No.8 Unit of 9000 B.H.P. Boving's turbine.

Names of materials, etc.	Unit.	Qty.	Rate.	Amount.
1. Cheek rings for 9000 BHP turbine	No.	1	546- 2-0	546- 2-0
2. Gear pump for Mitchel thrust bearing	"	1	423-13-0	423-13-0
3. Compensator for V.K.H. Governor	"	1	902-14-0	902-14-0
4. Over & under speed tripping device for V.K.H. governor.	"	1	1,805- 4-0	1,805- 4-0
5. Spring for pilot valve of V.K.H. governor.	"	1	5- 0-0	5- 0-0
6. Gauge, oil pressure, 0-300 lbs.	"	1	25- 7-0	25- 7-0
7. Pads for Mitchel thrust bearing.	"	20	7-14-0	157- 8-0
8. Belting leather laminated 4"	Ft.	54½	6- 2-0	333-13-0
9. Oil Cy. 2	glns.	168	2- 7-10	418- 4-0
10. Red star spindle oil	"	190	5- 0-0	950- 0-0
11. Collars leather for main valve piston	"	2	55-14-0	111-12-0
12. -do- -do- top stem	"	1	6- 2-0	6- 2-0
13. -do- -do- bottom stem	"	2	10- 5-0	20-10-0
14. -do- for relief valve piston	"	1	62- 6-0	62- 6-0
15. Packing klingrite 1/16"	lbs.	10	4- 1-5	40-14-2
16. -do- 1/32"	"	5	4- 9-2	22-13-10
17. Packing bound rubber 6 mlm.	Ft.	40	1- 2-0	45- 0-0
18. Miscellaneous materials such as kerosene oil, petrol, waste cotton, cheese cloth, emery ~~stone~~ paper, greese, charcoal, etc.			L. S.	500- 0-0
19. Labour charges.			L. S.	1,100- 0-0
20. Stock Incidentals at 6½%				398- 9-0
21. Contingencies.				200- 0-0
			Total.	L.8,076- 4-0
			Or say L.8,076/- only.	


 CBC-GH.
 22/7


 Chief Electrical Engineer.


 General Supdt. of Generation.

Government of Mysore.

Electrical Department.

Sivasamudram Section.

Rehabilitation Works of No.7 unit of 5600 B.H.P. Goving's turbine.
Work Order No. A-11(a).

Names of materials.	Unit.	Qty.	Rate.	Amount.
1. Cheek rings	No.	2	201-10-0	403- 4-0
2. Angle rings	"	2	168- 5-0	336-10-0
3. Adjusting ring	"	1	513-13-6	513-13-6
4. Bronze bushings for front cover	"	20	~~25-13-5~~	~~504- 4-4~~
5. -do- for back cover	"	20	15- 1-0	301- 4-0
6. Main seating for relief valve.	Sets	1	207- 8-0	207- 8-0
7. Pilot valve rod with seating for R.V.	"	1	222- 8-0	222- 8-0
8. Pendulum band for V.K.5 governor	No.	2	2- 0-0	2- 0-0
9. Adjusting bolts	"	10	5- 6-6	54- 1-0
10. Leather collar for R.V.piston	"	1	43- 4-0	43- 4-0
11. -do- for main valve piston	"	2	59-11-6	119- 7-0
12. -do- for bottom stem	"	2	18- 5-0	36-10-0
13. -do- for top stem	"	1	13- 6-0	13- 6-0
14. -do- for Servomotor piston of governor.	"	1	39- 9-0	39- 9-0
15. -do- for wicket spindle	"	20	2- 2-7	43- 3-8
16. Babbit metal	lbs.	150	0-14-4	134- 6-0
17. Laminated leather beling 7"	Ft.	19	9- 8-3	180-12-9
18. -do- 1-3/8"	"	26	2- 2-0	55- 4-0
19. Oil Cy2.	Glns.	90	3- 0-7	273- 4-6
20. Red star spindle oil	"	45	5- 1-7	229- 7-3
21. Gauge oil pressure	Mos.	1	25- 8-0	25- 8-0
22. Miscellaneous materials such as kerosene oil, petrol, waste cotton emery cloth, cheese cloth, grease files etc.			L.S.	350- 0-0
23. Workshop charges			"	110- 0-0
24. Labour charges			"	850- 0-0
25. Stock incidentals @ 6 1/3				263- 1-6
26. Contingencies			L.S.	150- 0-0
			Total.	5,472- 8-6

Credits:

1. Copper scrap of field coils Lbs. 560 0- 0-0 105- 0-0

Total debits - Rs. 5,472- 8-6

" credits - 105- 0-0

Net debits. Rs. 5,367- 8-6 Cr say Rs. 5,368/-

CBC-GH.

General Supdt. of Generation.

Chief Electrician.

For Rehabilitation works of No.6 Unit of 5600 B.H.P. Boving's
Turbine.
(W.O.No.A-11.b)

Names of materials, etc.	Unit	Qty.	Rate	Amount
1. Angle Rings.	Nos.	2	168 5 0	336 10 0
2. Check Rings.	-do-	2	201 10 0	403 4 0
3. Brass bushings for front cover	"	20	31 10 5	633 0 4
4. -do- for back cover	"	20	4 15 7	99 7 8
5. Control valve for main valve	"	1	492 11 0	492 11 0
6. Pilot valve rod with seating for R.V.	Set	1	218 14 0	218 14 0
7. Adjusting bolts.	Nos	10	5 5 11	53 11 2
8. Pilot valve rod housing for R.V.	"	1	22 11 0	22 11 0
9. Gauge oil pressure 0.350 Lb.	"	1	79 12 0	79 12 0
10. Collars leather for servomotor piston of Governor.	"	1	13 7 0	13 7 0
11. -do-relief valve piston.	"	1	43 4 0	43 4 0
12. -do-for main valve piston	"	2	59 11 6	119 7 0
13. -do- -do- top stem	"	1	13 7 0	13 7 0
14. -do- -do- bottom stem.	"	2	18 5 0	36 10 0
15. Babbit metal	Lbs.	201	4 1 1	817 9 9
16. Oil CY2	Gls.	90	3 0 7	273 4 6
17. Red star spindle oil	"	45	5 1 7	229 7 3
18. Belting leather laminated 7"	Ft.	20	9 8 3	190 5 0
19. -do- -do- 13/8"	"	26	2 2 0	55 4 0
20. Round Rubber Packing 9 m.m.	"	133	1 3 6	162 1 6
21. -do- -do- 6 m.m.	"	98	0 12 3	75 0 6
22. Miscellaneous materials such as K.Oil, Petrol, Waste Cotton, Amery cloth, & Grease files, etc.			L.S.	375 0 0
23. Workshop charges			L.S.	190 0 0
24. Labour charges			L.S.	850 0 0
Stock Incidentals @ 6 1/2%				308 6 3
Contingencies			L.S.	200 0 0
			Total	6,292 10 11
<u>Credits.</u>				
1. Field coils of No.6 Unit as copper scrap	Lbs.	3360	0 3 0	330 0 0
			Total	5,362 10 11
				or Rs.5,363 0 0

Rupees Five Thousand Six Hundred and Sixty Three only.

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CBC.YSG.

GENERAL SUPDT: OF GENERATION.

M. R. Arora
Chief Electrical Engineer.

ESTIMATE NO.7

For Rehabilitation works of No.5 Unit of 5600 B.H.P. Bovings
Turbine.
(W.O. No.A-11)

15

Names of materials, etc.	Unit	Qty.	Rate.	A m o u n t.
1. Pilot valve rod with seatings for R.V.	Set.	1	222 9 0	222 9 0
2. Gauge Oil Pressure 0.300 LBS.	Nos.	1	25 8 0	25 8 0
3. Leather Collar for Servomotor Piston of Governor.	"	1	18 10 0	18 10 0
4. -do- for main valve piston	"	2	6 3 6	12 7 0
5. -do- for top stem.	"	1	13 7 0	13 7 0
6. -do- bottom stem.	"	2	15 15 0	31 14 0
7. -do- for relief valve piston.	"	1	42 3 0	42 3 0
8. -do- for guide vanes	"	20	2 0 0	40 0 0
9. Packing round rubber 9 m.m.	Ft.	32	2 2 0	68 0 0
10. -do- 6 m.m.	"	52½	1 2 0	59 1 0
11. -do- 5 m.m.	"	33	0 15 0	30 15 0
12. Laminated leather belting 7"	"	20½	18 13 4	386 1 4
13. -do- 1.3/8"	"	52	2 2 0	110 8 0
14. Babbit metal	Lbs.	220	2 0 8	449 2 8
15. Packing Klingrite 1/16"	"	10	4 1 5	40 14 2
16. -do- 1/32"	"	5	4 9 2	22 13 10
17. Oil Cy2	Gls	126	2 7 10	313 11 0
18. Red star spindle oil	"	45	5 0 0	225 0 0
19. Miscellaneous materials such as K.Oil, Petrol, Waste Cotton, Emery Cloth, Grease & files, etc.			L.S.	440 0 0
20. Work shop charges			L.S.	70 0 0
21. Labour charges			L.S.	850 0 0
22. Stock Incidentals @ 6½%				163 14 9
23. Contingencies			L.S.	100 0 0
24				
			Total	3,733 11 9

C r e d i t s:

1. Iron Scrap	Cwt. 25 Cwt)			
	45 Lbs)	1 0 0	25 6 0	
2. Brass scrap	Lbs. 270	0 2 0	33 12 0	
3. Copper scrap	" 1758	0 3 0	329 10 0	
			Total	383 12 0
			Nett	Rs. 3,347 15 9
				or 3,348 0 0

Rupees Three thousand three hundred and forty eight only.

CBC.YSG.

GENERAL SUPDT: OF GENERATION.

Chief Electrical Engineer

16

For Rehabilitation works of No.4 Unit of 5600 B.H.P. Boving's
Turbine
A-11

Name of materials, etc.	Unit	Qty.	Rate			Amount		
1. Check Nos.	Nos.	2	201	10	0	403	4	0
2. Angle Rings.	"	2	168	5	0	336	10	0
3. Bushings bronze for front cover "	"	20	15	1	0	301	4	0
4. -do- Back cover. "	"	20	25	3	5	504	4	4
5. Pilot valve rod with seating for R.V.	Set.	1	222	9	0	222	9	0
6. Unloading valve complete for V.K. 5 Governor.	Nos.	1	478	8	0	478	8	0
7. Adjusting Ring	"	1	212	5	0	212	5	0
8. Tachometer with pedestal	"	1	155	7	0	155	7	0
9. Gauge oil pressure 0.300 Lbs.	"	1	25	8	0	25	8	0
10. Leather collar for servomotor piston of governor.	"	1	18	10	0	18	10	0
11. -do- main valve piston	"	2	50	1	0	100	2	0
12. -do- to stem	"	1	13	7	0	13	7	0
13. -do- bottom stem.	"	2	15	15	0	31	14	0
14. Bearing metal	Lbs.	224	0	14	5	201	13	4
15. Belting leather laminated 7"	Ft.	20	9	8	3	190	5	0
16. -do- 1.3/8	"	52	2	2	0	110	8	0
17. Oil Cy2	Gls.	126	2	7	10	313	11	0
18. Red star spindle oil	"	45	5	0	0	225	0	0
19. Packing Round Rubber 9.m.m.	Ft.	34	2	0	6	69	1	0
20. -do- 6 m.m.	"	51	1	2	0	57	6	0
21. -do- 5 m.m.	"	33	0	15	0	30	15	0
22. -do- 4 m.m.	"	6	0	9	4	3	8	0
23. Packing fibre 1/32"	Lbs.	4 1/2	2	12	0	12	6	0
24. -do- Klingrite 1/16"	"	10	4	1	5	40	14	2
25. -do- 1/32"	"	5	4	9	2	22	13	10
26. Packing for manhole cover of Penstock ..	Nos	2	3	1	0	6	2	0
27. Miscellaneous materials such as K.Oil, Petrol, Waste Cotton, Cheese cloth, Emery Cloth, Grease and files, etc.						L.S.	480	0 0
28. Workshop charge						L.S.	69	3 0
29. Labour charges						L.S.	850	0 0
30. Stock incidentals @ 6 1/4%							289	13 5
			Total			5,777	4	1
Contingencies			L.S.			150	0	0
			Total			Rs. 5,927	4	1
						or 5,927	0	0

Rupees Five thousand Nine Hundred and Twenty Seven only.

CBC.YSG.

GENERAL SUPDT: OF GENERATION.

Chief Electrical Engr. In-charge.

ESTIMATE NO.9

For Rehabilitation works of No.3 Unit of 9000 B.H.P. Boving's
Turbine.W.O.No.A-11.

Names of materials, etc.	Unit	Qty.	Rate.	A m o u n t.
1. Main oil pump for V.K.H. Governor.No.		1	1,699 5 0	1,699 5 0
2. Unloading valve for V.K.H. Gov.	"	1	341 10 0	341 10 0
3. Piston regulating valve for V.K.H. Governor.	"	1	148 7 4	148 7 4
4. Pilot valve for 9000 B.H.P. Turbine	"	1	252 3 0	252 3 0
5. Belting leather laminated 4"	Ft.	54½	6 2 0	333 13 0
6. -do- 2"	"	8	2 4 4	18 2 8
7. Gauge oil pressure o.300 Lbs.	Nos.	1	25 8 0	25 8 0
8. Oil Cy2	Gls.	168	2 7 10	418 4 0
9. Red star spindle oil	"	100	5 0 0	500 0 0
10. Packing Kingrite 1/16"	Lbs.	10	4 1 5	40 14 2
11. -do- 1/32"	Lbs.	5	4 9 2	22 13 10
12. Miscellaneous materials such as K.OIL, Petrol, Waste Cotton, Cheese cloth, Emery Cloth, Grease, etc.			L.S.	425 0 0
13. Labour charges.			L.S.	650 0 0
14. Stock Incidentals @ 6½%				264 2 0

Contingencies			L.S.	5,140 3 0
				150 0 0

		* Total	Rs.	5,290 3 0
			or	5,290 0 0

Rupees Five thousand Two Hundred and Ninety only.

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CBC.YSG.

M. K. Rao
Chief Electrical Engineer.

12/19
GENERAL SUPDT: OF GENERATION.

Government of Mysore.

Electric Department.

Sivasamudram Section.

Rehabilitation works of No 2 unit of 5600 B.H.P. Savings turbine.
Work Order No. A-11(d).

Names of materials, etc.	Unit.	Qty.	Rate.	Amount.
1. Cheek rings	No	2	201-10-0	403- 4-0
2. Adjusting ring	"	1	212- 5-0	212- 5-0
3. Bushings bronze for front cover	"	20	34- 4-7	685-11-8
4. -do- for back cover	"	20	56- 8-9	1,130-15-0
5. Pilot valve rod with seating for R.V.	Set	1	31-13-0	31-13-0
6. Leather collar for servomotor piston of governor.	No.	2	39- 9-0	79- 2-0
7. -do- for relief valve piston	"	2	43- 4-0	86- 8-0
8. -do- main valve piston	"	2	59-11-6	119- 7-0
9. -do- -do- top stem	"	1	6- 1-0	6- 1-0
10. -do- -do- bottom stem	"	2	18- 5-6	36-11-0
11. Leather belting laminated 7"	Ft.	20	9- 5-3	190- 5-0
12. -do- 1-3/8"	"	26	2- 2-0	55- 4-0
13. Round rubber packing 9 m.m.	"	43	1-5-10	53- 4-10
14. -do- 6 m.m.	"	107	0-11-3	81-14-9
15. Packing Klingrite 1/16"	Lbs.	32	8- 8-0	272- 0-0
16. Spindle oil	Glns.	45	5- 1-7	229- 7-3
17. Oil Cy2.	"	126	2- 7-10	313-11-0
18. Adjusting brass screws	Nos.	12	5-10-0	67- 8-0
19. Miscellaneous materials such as kerosene oil, petrol, waste cotton, emery cloth, cheese cloth, grease, files etc.			L.S.	425- 0-0
20. Workshop charges			"	50--0-0
21. Labour charges			"	1,000- 0-0
22. Stock Incidentals at 6%				283- 1-9
Contingencies			L.S.	5,812-12-3
				200- 0-0
			Total.	<u>6,012-12-3</u>
Or Say Rs. 6,013/- only.				

CBG-GH.

Genl. Supdt. of Generation.

Chief Electrical Engineer,

ESTIMATE NO.11

or Rehabilitation works of 10 and 20 Tons Crane and ~~the~~ track
up to No.9 Unit; ~~and~~ overhauling and cleaning of 10-Ton
Crane in Seshadri Transformer Station.

Names of materials, etc.	Unit	Qty.	Rate	Amount.
1. Bolts and Nuts $1\frac{1}{2}" \times \frac{1}{2}"$ & $2" \times \frac{1}{2}"$	Nos.	550	0 3 9	128 14 6
2. Miscellaneous materials such as K.Oil, Waste Cotton, Emery Cloth, Black paint & brushes etc.			L.S.	150 0 0
3. Labour charges			L.S.	200 0 0
4. Stock Incidentals @ $6\frac{1}{4}\%$				17 7 0
			Total	496 5 6
Contingencies			L.S.	15 0 0
			Total	RE. 511 5 6 or 511 0 0

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CBC.YSG.

Cr 8/12/9
GENERAL SUPDT: OF GENERATION.

M. A. R. S.
Chief Electrical Engineer.

Estimate No.12.

For Rehabilitation works.- Running Air Line to Generating Station.
(W.O.No.A-11)

Names of materials, etc.	Unit.	Qty.	Rate.	A m o u n t.
1. Pipe Galvanized 1"	Ft.	484	0 7 0	211 12 0
2. -do- 2"	"	34	0 3 7	7 9 10
3. Valve Gun metal 1"	Nos.	4	4 0 3	16 1 0
4. -do- 2"	Nos.	4	2 12 3	11 1 0
5. Miscellaneous materials such as bends, Elbows, Unions, tees and reducers, etc.			L.S.	80 0 0
6. Labour charges			L.S.	120 0 0
7. Stock Incidentals @ 6 1/4%				20 6 6
			Total	466 14 4
Contingencies			L.S.	15 0 0
			Total	Rs. 481 14 4
				or 482 0 0

CBC.YSG.

Chief Electrical Engineer. GENERAL SUPDT: OF GENERATION.

C r e d i t s . -

1. M.S.sheet 8"x7/8"	Rft.	158	1 1 4	171 2 8
			Nett Total	2,362 4 8
			or say Rs.2362/-	

CBC.YSG.

GENERAL SUPDT: OF GENERATION.

Chief Electrical Engineer.

Rehabilitation Works.- Reconditioning the Crane Track from No.9
Unit to No.11 Unit.(A-30)

Names of materials, etc.	Unit.	Qty.	Rate.	A m o u n t.
1. 'I' beams 5"x3"	Rft.	355	2 8 0	887 8 0
2. Flat iron 8"x $\frac{1}{2}$ "	Lbs.	4065	0 2 0	508 2 0
3. -do- 2 $\frac{1}{2}$ "x5/8"	"	196	0 2 1	25 8 4
4. Bolts and nuts G.I. 2 $\frac{1}{2}$ "x $\frac{1}{2}$ "	Nos.	200	0 2 3	28 2 0
5. -do- 1 $\frac{1}{2}$ "x $\frac{1}{2}$ "	"	150	0 2 6	23 7 0
6. -do- 8"x5/8"	"	60	0 2 0	7 8 0
7. Paint, steel ~~note~~ Elastic black	Lbs.	56	0 6 6	22 12 0
8. Miscellaneous materials such as Jungle wood, poles, Bamboos, Coir rope, & wire nails, etc.			L.S.	200 0 0
9. Workshop charges.			L.S.	225 0 0
10. Labour charges.			L.S.	410 0 0
11. Stock incidentals @6 $\frac{1}{4}$ %				120 8 0
12. Contingencies			L.S.	75 0 0
			Total	2,533 7 4
<u>C r e d i t s .-</u>				
1. M.S. sheet 8"x7/8"	Rft.	158	1 1 4	171 2 8
			Nett Total	2,362 4 8

or say Rs.2362/-

CBC.YSG.

GENERAL SUPDT: O' GENERATION.

Chief Electrical Engineer.

ESTIMATE NO.15

For Rehabilitation works.-Installing a new Electric Motor with
complete equipment for the 45-ton Electric
(Crane Work Order No.A-11)

23

Names of materials, etc.	Unit	Qty.	Rate	A m o u n t.		
1. Motor D.C.25 H.P. 450 R.P.M.	Nos.	1	5,333	5	4	5,333 5 4
2. Control equipment (resistances limited switches)	Set.	1	2,933	5	4	2,933 5 4
3. Hard copper collectors with insulating bolts, etc.	"	1	133	5	4	133 5 4
4. Cross collectors & down shop collectors	"	1	166	10	8	166 10 8
5. Paint silver grey	Kegs	8	8	0	0	64 0 0
6. Angle iron 2½"x2½"x3/8"x135'	Lbs.	797	0	2	2	107 14 10
7. Miscellaneous materials such as K.Oil, Petrol, Emery Cloth, Waste cotton and other unforeseen materials.						L.S. 350 0 0
8. Workshop charges.						L.S. 300 0 0
9. Customs, Insurance, Freight charges on items 1, 2, 3 & 4 @30% on the cost of material						2,570 0 0
10. Labour charges						L.S. 1,500 0 0
11. Stock incidentals @6½%						747 6 6
12. Contingencies @ 5%						710 5 0
Total				14,916 5 0		

or Say Rs.14,916 C 0

CBC.YSG.

GENERAL SUPDT: OF GENERATION.

Chief Electrical Engineer.

Government of Mysore.

Electrical Department.

Sivasamudram Section.

Estimate No. 16.

24

Rehabilitation works - Running pipe line from Forebay to Trans-
former cooling gravity tank on hill-side. J.O.A-27.

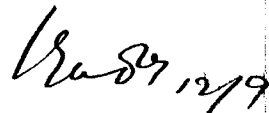
Names of materials, etc.	Unit.	Qty.	Rate.	Amount.
1. Pipe G.I. 3"	Rft.	242	0- 9-0	136- 2-0
2. Miscellaneous materials ~~such~~ and pipe fitting, such as bends elbows, reducers couplings, etc.			L.S.	50- 0-0
3. Labour charges.			"	50- 0-0
4. Stock Incidentals at 6 $\frac{1}{4}$ %			..	11-10-0
5. Contingencies			L.S.	5- 0-0
			Total.	Rs. 252-12-0

Or say Rs. 253/-.

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CBC-GH.


Chief Electrical Engineer.



General Supdt. of Generation.

Government of Mysore.

Sivasamudram Section.

Electrical Department.

Estimate no 17.

Rehabilitation works - Installing 5-ton traversing crane
hoists at Govt. Stores at top and bottom of trolley.
Work Order No. A-11.

Names of materials.	Unit.	Qty.	Rate.	Amount.
1. Morris ball bearing triple gear pulley block 5 ton capacity complete with chain for a clean lift of 15 ft.	Nos.	3	1,080- 0-0	3,240- 0-0
2. Morris geared travelling trolleys 5-ton capacity complete with hand chain for 19-ft. from floor level to joist suitable to run 8"x4" joist.	"	3	540- 0-0	1,620- 0-0
3. I-beam 8"x 4"x 60' (3 lengths of 20-ft.).	Lbs.	1080	0- 2-2	216- 4-0
4. Vertical stanchions 12"x5"x90 (in 6 pieces of 15')	"	1620	0- 2-2	359- 6-0
5. Braces 8"x4"x 90' (6 pieces of 15')	"	1620	0- 2-2	359- 6-0
6. Joining plates etc.	"	900	0- 2-2	21-14-0
7. Miscellaneous and unforeseen materials.			L.S.	500- 0-0
8. Foundation and concrete grout.	Cft.	270	0- 8-0	135- 0-0
9. Laying concrete	"	270	1- 0-0	270- 0-0
10. Customs insurance and freight charges @ 30% on items 1 & 2.				1,458- 0-0
11. Labour charges			L.S.	500- 0-0
12. Stock incidentals @ 6 1/4% on items 1 to 7 and 10.				470- 5-0
13. Contingencies at 5%			..	445- 0-0
			Total . . .	9,345- 3-0

Or say Rs.9,345- 0-0 only.

CBC-EH.

General Supt. of General Engrs.

Chief Electrical Engineer.

GOVERNMENT OF MYSORE.

ELECTRICAL DEPARTMENT.

Estimate 18
Sivasamudram Section.

Rehabilitation works - Transporting heavy materials on material track both from Govt. Store to bottom station and from bottom station to stores on top - W.O. A-1C

Names of materials, etc.	Unit	Qty.	Rate.	Amount.
1. Removing the deteriorated socket poles by chipping off the cement concrete grouting in No.1 & 2 platforms from top and regrouting 6 new socket poles with cement concrete in each platform.	No.	2	800-0-0	1,600 0 0
2. Materials such as sleepers, packing materials, grease, dirty oil, cotton waste, bolts & nuts, etc., @ Rs.20/- a trip.	40 Trips			800 0 0
3. Labour charges @ Rs.200/- per trip for 40 trips.				8,000 0 0
4. Stock Incidentals on item No.2 only at 6 1/2%				50 0 0
5. Contingencies.			L.S.	350 0 0
	Total			10,800 0 0

CBC.YSG.

M. R. Aris
Chief Electrical Engineer.

18/11/49
GENERAL SUPDT: OF GENERATION.

Estimate No.19

Sivasamudram Section

Rehabilitation works - Overhauling Exciters Turbines

W.O. A-11

27

Names of materials, etc.	Unit.	Qty.	Rate.	Amount.
1. Servomotor piston collar for V.K.B. Governor.	Nos.	2	1 9 6	3 3 0
2. Belting gripole 3½"	Ft.	44	1 14 2	82 15 4
3. Leather belting laminated 5"	"	149*	6 6 3	952 3 3
4. Miscellaneous materials such as kerosene oil, petrol, waste cotton, grease, emery cloth, cheese cloth, etc.			L.S.	20 0 0
5. Labour charges.			L.S.	00 0 0
6. Stock Incidentals at 6½%				72 6 3
7. Contingencies.			...	40 0 0
		Total	...	Rs.1,570 11 10

Or Say Rs.1,571/-

CBC.YAG.

GENERAL SUPDT: OF GENERATION.

Chief Electrical Engineer.

Government of Mysore.

Sivasamudram Section.

Electrical Department.

Estimate No. 20.

Rehabilitation works - Running Fire hydrants to the Generating and Transformer Stations - W.C.No.A-11.

Names of materials.etc:	Unit.	Qty.	Rate.	Amount
1. Pipe Galvd. 1½"	Ft.	400	0-12-6	312- 8-0
2. -do- 3"	"	100	1- 0-0	100- 0-0
3. Rubber hose armoured 1½"	"	780	4- 0-0	3120-0-0
4. Brass nipples, nozzles, couplings, for rubber hose and valves.	Sets	20	25- 0-0	500- 0-0
5. Valve high pressure 3"	Nos.	1	238- 0-0	238- 0-0
6. Valve gun metal 3"	Nos	2	35- 0-0	70- 0-0
7. -do- 1½"	"	15	5- 0-0	75- 0-0
8. Angle iron 1½"x 1½"x 1/4"	lbs	750	0- 2-2	101- 9-0
9. Sheet asbestos	Sheets	12	9- 5-0	110- 4-0
10. Zinc sheets plain	"	12	5- 0-0	50- 0-0
11. Miscellaneous materials and pipe, fitting, such as bends, elbows, unions, reducers, tees, etc.			L. S.	300- 0-0
12. Workshop charges			"	100- 0-0
13. Labour charges			"	650- 0-0
14. Stock incidentals at 6½%			"	318- 0-0
15. ~~Stock~~ Contingencies.			"	175- 0-0
Total.				Rs.6,230- 5-0

Or Say Rs.6,230/-

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333-GH.

General Supdt. of Generation.

M. R. Arora
Chief Electrical Engineer.

Government of Mysore.

Sivasamudram Section.

Electrical Department.

Estimate No. 21.

Rehabilitation works - Running ~~water~~ ^{fire} hydrants to top Station
(Sir K. Sheshadri Iyer's Power Station - J.C.A-11.)

Names of materials, etc.	Unit.	Qty.	Rate.	Amount.
1. Pumping set 5 H.P. complete with electrical fittings, ~~xxx~~ starter, etc.	Set	1	1000-0-0	1,000- 0-0
2. Pipe galvd. 3"	Ft.	400	2-0-3	806- 4-0
3. -do- 1½"	Ft.	100	1- 4-0	125- 0-0
4. Armoured rubber hose pipe 1½"	Do.	720	4- 4-0	3,060- 0-0
5. Valve G.M. 3"	No.	2	35- 0-0	70- 0-0
6. -do- 1½"	"	12	5- 0-0	60- 0-0
7. Brass nozzles, nipples, couplings for rubber hose and valve.	Sets	12	25- 0-0	300- 0-0
8. Miscellaneous materials and pipe fittings such as elbows, unions, reducers, tees, bends, etc.			L.S.	300- 0-0
9. Workshop charges.			L.S.	100- 0-0
10. Labour charges			"	500- 0-0
11. Stock Incidentals at 6¼%			..	363-13-3
12. Contingencies at 5%			..	334- 4-0
			Total.	7,019- 5-3

Or Rs. 7,019/-

DR

M. R. Arora

Chandrasekhar
12/9-

CBC-GH.

Chief Electrical Engineer.

General Supt. of Generation.

Estimate 2.

Sivasamudram section

ABSTRACT OF ESTIMATES.

For Rehabilitating the Electrical Equipment of generating and transformer Stations, etc., at Sivasamudram. -

Sl.No.	W.O. No.	Names of the Estimates.	Amount of Estimates.
			Rs.
1.	A-1	Providing temporary lighting to generating & transformer stations.	5,752
2.	A-2	Exciter repairs.	21,617
3.	A-3	Generator repairs.	1,73,415
4.	A-4 & A-5	High Tension Bank & Line Switches	18,103
5.	A-6	High Tension Transformers.	55,439
6.	A-12	Bench Board & Control Wiring.	3,56,448
7.	A-14	Interconnecting Transmission Lines.	610
8.	A-15	Running L.T. Cables and D.C. Bus in lead to.	2,63,633
9.	A-17	Supply of Power to Kollegal	9,890
10.	A-18	Telephones in Generating and Transformer Stations.	9,125
11.	A-19	Tools & Plant.	15,000
12.	A-20	Fixing lightning conductors.	3,286
13.	A-21	Power & Telephone lines from bottom Station to Forebay.	1,059
14.	A-22	Rewiring the lighting and Telephone signals in Generating and Transformer Stations.	46,132
15.	A-23	Repairs to Auxiliary room.	4,104
16.	A-35	Running a net work of ground wire in Generating, Transformer and top Stations.	7,185
17.	A-36	Installing L.T. Switches and L.T. Bus.	3,41,335
18.	A-43	Running control cable and D.C. cables from Bottom station to Forebay.	37,833
Grand Total ..			13,69,960

Certified that I and my qualified Asst.
have visited the spot & here
prepared the estimates on
NEM.YSG. current market rates
and providing for the most
economical & safe way of executing the work.
The market & labor rates are the same.

GENERAL SUPDT: C. GENERATION.
12/9
12/9
12/9

Sivasamudram Section.

Estimate for providing temporary lights in the generating, transformer and Top Stations - W.O.A-1

31

Names of materials.	Unit.	Qty.	Rate.	Amount
1. Pole steel of sizes	No.	2	2 10 0	5 4 0
2. Cross arms, 4-pins	"	6	0 8 0	3 0 0
3. -do- 3-pins	"	9	lot	10 4 0
4. -do- 2-pins	"	1	1 1 0	1 1 0
5. Insulators & pins, distribution	"	60	2 13 0	168 12 0
6. -do- strain	"	7	2 2 7	15 2 0
7. wire copper No.6 B&S	Lbs	253	0 12 0	189 12 0
8. -do- No.7/.074	"	75	0 12 6	58 10 0
9. Transformer 5 KVA.	No.	3	162 2 0	486 6 0
10. -do- 10 KVA.	"	2	lot	471 4 0
11. -do- 25 KVA.	"	3	1500 0 0	4,500 0 0
12. Oil transil No.10 C.	Glns	88	3 11 0	324 8 0
13. Arresters Lightning, 3 to 6 KV.	No.	3	29 5 0	87 15 0
14. Primary cutouts 6 x 243	"	6	25 6 0	152 4 0
15. Wire insulated, 4 B & S.	Ft.	2000	276 1 0	552 2 0
16. -do- 6 "	"	3400	270 13 0	920 12 0
17. -do- 10 "	"	3750	Per 1000-ft. " 83 12 0	314 1 0
18. -do- 12 "	"	5000	" 80 0 0	400 0 0
19. -do- 14 "	"	5500	" 64 0 0	352 0 0
20. -do- 19/14 "	"	100	lot	41 11 0
21. -do- for Cab tyre twin No. 12 B&S.	"	540	22 4 0 (Per 100-ft.)	120 2 0
22. Cord flexible of sizes	"	800	lot	70 0 0
23. Flood lights, G.E.	No.	9	lot	1,462 07 0
24. Eudura fittings	"	2	2 8 0	5 0 0
25. Trojan fittings.	"	6	12 8 0	75 0 0
26. Ivanhoe fittings.	"	2	4 10 0	9 4 0
27. Control cable 2-core.	Ft.	258	lot	28 14 0
28. -do- 4-core.	"	1916	lot	506 10 0
29. T.P.S.T. and D.P.S.T switches of sizes.	No.	16	lot	144 0 0
30. Sockets B.C. & C.G.	"	325	0 10 0	203 2 0
31. Lamps of sizes	"		L.S.	250 0 0
32. Tumbler switches.	"	40	1 4 0	50 0 0
33. Fuse cartridges, fuse wire, etc.			L.S.	150 0 0
34. Tape linen, Acme, Cambric, etc.			"	50 0 0
35. Miscellaneous items, such as solder, paste, kerosene oil, brushes, screws, rope, rail pieces, dry cells, etc.			L.S.	500 0 0
Stock Incidentals at 6 1/2%				15,679 3 0
Labour charges				855 0 0
				150 0 0
Contingencies				14,684 3 0
				325 0 0
Total				15,009 3 0

Or Say Rs.15,009/- only

Credits:

1. Transformer, 5 K.V.A.	No.	3	486 6 C	100%
2. -do- 10 "	"	2	471 4 C	"
3. -do- 25 "	"	3	4,500 0 C	"
4. Oil transil No. 10 C.	Glns.	88	243 6 0	75%
5. Arresters lightning 3 to 6 KV.	No.	3	87 15 0	100%
6. Primary cutouts 6 x 243	"	6	114 3 0	75%
7. Eudura fittings	"	2	5 0 0	100%

P.T.O.

32

8. Trojan type fittings.	No.	6	75	0	0	100,	
9. Ivannoe fittings.	"	2	9	4	0	100,	
10. Flood lights, G.I.	"	9	1,462	7	0	"	
11. Insulators & pins, distribution	"	50	70	5	0	50,	
12. Wire copper No.6 B&S	Lbs.	200	112	8	0	75,	
13. Wire insulated 4 B. .G.	ft.	1500	310	9	0	"	
14.-do- -do- 0 B & S.	"	2500	507	12	0	"	
15.-do- -do- 10 "	"	2500	157	0	0	"	
16.-do- -do- 12 "	"	2500	120	0	0	1000'	@ 75, 1500' @
17.-do- -do- 14 "	"	3000	112	0	0	1000'	@ 75, 50,
						2000'	@ 50,
18. Central cable, 4 core.		1477	297	1	0	912'	@ issue rate
						365'	@ 20,
19. Knife switches of sizes	Nos.	9	52	4	0	75,	
20. Sockets B.C. & S.C.	Nos.	200	62	8	0	50,	

9,257 6 0

or say Rs.9,257/- only

Total debits ..	Rs.15,009	0	0
Total credits ..	9,257	0	0

Net debits.	Rs. 5,752	0	0

NDM.MSS.YSG.

W. S. 87
GENERAL SUPDT: OF GENERATION
12/9-
M. R. D. Singh
Chief Electrical Engineer.

Sivasamudram Section.

Estimate for effecting repairs to Exciters at Sivasamudram. - W.O. A. 2.

Names of materials, etc.	Unit	Qty.	Rate.	Amount
1. Cable V.C. 750,000 C.M.	Ft.	380	1 3 1	453 4 0
2. -do- 500,000 C.M.	Ft.	25	1 0 0	25 0 0
3. -do- 250,000 C.M.	Ft.	1100	1 7 0	1,581 4 0
4. Insulated cable No. 5 B&S.	Ft.	750	0 6 6	304 11 0
5. Ferguson switches	No.	2	2900 0 0	5,800 0 0
6. Starting compensator.	No.	1	2996 6 0	2,996 6 0
7. G.E. starting compensator	No.	2	4300 0 0	8,600 0 0
8. Series winding for commutator poles		6	105 5 0	631 14 0
9. Field windings for Exciter set.	Set.	1	956 5 0	956 5 0
10. Field rheostats	No.	2	409 13 0	819 10 0
11. D.C. Ammeters.	No.	2	30 0 0	60 0 0
12. Closing & trip coils	No.	5	lot	134 8 0
13. Fibre packing sheets & rods				250 0 0
14. Cement.	Cwt.	20	3 11 0	73 12 0
15. Solder	Lbs.	125	2 4 0	281 4 0
16. Silver lead.	Lbs.	30	3 1 0	92 6 0
17. Stone jelly	Cyds.	14	7 12 0	108 8 0
18. Insulated wire 14 B&S.	Ft.	1825	0 1 0	114 1 0
19. Insulation materials, such as tape, Acme, cambric, varnish, linen, cloth, etc.			L.S.	750 0 0
20. Miscellaneous items such as I- beam, copper terminals, D.P.S.T. switches, lamps, fibre rod, cleats, grease, kerosene oil, pipe, petrol, cheese cloth, Baskets, etc.			L.S.	1,000 0 0
21. Workshop charges			L.S.	50 0 0
22. Charges for repairing two compen- sators by Govt. Elec. Inspector.	No.	2	"	1,000 0 0
23. Stock Incidentals at 6 1/4%				1,630 3 0
24. Labour charges.				3,500 0 0
25. Contingencies				750 0 0
			Total	31,963 0 0

Credits:-

1. D.P.S.T. switches	No.	6	85 0 0	50%
2. Cable V.C., 250,000 C.M.	Ft.	132	39 0 0	25%
3. -do- -do-	Ft.	84	84 0 0	
4. Insulation materials	L.S.		674 0 0	
5. Ferguson switches	No.	2	5,800 0 0	100%
6. Starting compensator	No.	1	2,996 6 0	100%
7. Compensators repairs by Govt. Elec. Factory.	"	2	750 0 0	75%
			10,346 4 0	

Or Say Rs. 10346/-

Gross amount of the Estimate	..	31,963 0 0
Less credits.	..	10,346 0 0
Net amount of Estimate		Rs. 21,617 0 0

Chief Electrical Engineer.

General Superintendent of Generation
Sivasamudram.

GOVT. MILIT. OF MYSORE.

Sivasamudram section.

ELECTRICAL DEPARTMENT

Estimate for Generator repairs at Sivasamudram.
W.O.No.A-3

Names of materials, etc.	Unit.	Qty.	Rate.	Amount.
1. Field coils for 3000 K.W. Generators complete with vane-boards, leatherolas, wedges, etc.	Set.	4 or 6) coils each.	10,900 0 0	43,600 0 0
2. Generator coils for 3000 K.W. Generator (new) complete with temporary coil, fillers, wedges, etc.	"	4 sets	22,000 0 0	88,000 0 0
3. -do- -do- old with wedges, connections, for rewinding generators 4 & 5			100	10,000 0 0
4. Transformer 3 K.V.A.	No.	1	120 0 0	120 0 0
5. D.C. 3 wire motor 110-v for governor operation.	"	10	100 0 0	1,000 0 0
6. Wire cable 500,000 C.M.	Ft.	83	1 0 0	81 0 0
7. -do- 250,000 C.M.	Ft.	1136	actual	1,571 11 0
8. -do- 3/0 B.&S.	Ft.	955	-do-	1,399 11 0
9. -do- insulated No.14 B&S.	Ft.	1467	-do-	96 12 0
10. -do- 7/.029	Ft.	650	7 0 0	51 0 0
11. -do- 8/B&S. H.T.	Ft.	80	(per 100')	82 8 0
12. Generator field rheostats for 3000 K.W. Generator.	No.	2	1,353 0 0	2,706 0 0
13. Renovated generator field rheostat with front panel & D.C. Motor.	No.	2	actual	806 8 0
14. Synchronoscope meter.	"	1	126 0 0	126 11 0
15. Current transformers 300:1	"	6	116 0 0	698 10 0
16. -do- -do- 500:1	"	1	131 0 0	131 0 0
17. Insulated wire from control cable		474'	0 0 8	19 12 0
18. Potential transformer 2200:110-v.	"	2	126 0 0	252 10 0
19. Field switch coil	"	2	12 0 0	24 4 0
20. Brush holders for 6 generators.			100	450 0 0
21. Brush carbon for 10 generators.	"			75 0 0
22. Ammeter D.C.	"	2	10 0 0	21 14 0
23. Volt-meter D.C.	"	1	14 0 0	14 0 0
24. Oil transil No.10 C.	Gln.	8	3 12 0	30 0 0
25. Cutouts primary	No.	5(3 (2	25 0 0	75 12 0
26. Fuse cartridges for above			15 0 0	30 0 0
27. Sheet copper	Lbs.	201	1 0 0	25 0 0
28. Slip rings for generator new set	Sets.	2	551 0 0	1,102 0 0
29. -do- -do- old set	"	2	770 0 0	1,540 0 0
30. Netting wire	Ft.	55	1 0 0	392 6 0
31. Solder blocks	Lbs.	300	1 12 0	525 0 0
32. Silver lead	"	200	3 0 0	600 0 0
33. Solder	"	1000	2 0 0	2,500 0 0
34. Insulating materials, such as Chmeline, Thinner tape cambric fibre, kerosene oil			L.	4,500 0 0
35. Miscellaneous items such as fuse wire, paste, soap, waste terminals, paint, brushes, scraps, etc.				500 0 0
Stock incidentals at 6 1/4%				1,63,258 10 0
Labour charges			L.	10,203 11 0
Contingencies.				6,000 0 0
				2,000 0 0
Total				1,81,462 0 0

Or say Rs.1,81,462/-

P. 100.

Credits:-

1. Cable insulated 250,000 C.F.	Ft.	510	402	15	0	100%
2. -do- 3/0 B&S.	"	884	607	10	0	50%
3. Generator stator coils for 5000 K.V. Generator.	Set.	1	1,094	8	0	100%
4. Copper scrap	Lbs.	24725	4,655	9	0	
5. Generator bottom coils	No.	168				
6. -do- top coils	"	6				
7. Field Rheostat	"	1	595	4	0	
8. Cutouts Primary	"	2	50	0	0	100%
9. -do-	"	3	57	14	0	50%
10. Transformer 5 K.V.A.	"	1	120	0	0	100%
11. Potential transformer	"	2	252	13	0	100%
12. Oil transil No. 10 C.	Glns	8	22	8	0	75%
13. Netting work wire	Ft.	50 Lot	390	0	0	100%
Total ..			8,046	15	0	

Or Say Rs. 8,047/-

Total Debits ..	Rs. 1,81,462	0	0
Total credits. ..	8,047	0	0
Net amount of Estimate	1,73,415	0	0

NIM.YSG.

GENERAL SUPDT: OF GENERATION.

Chief Electrical Engineer.

GOVERNMENT OF MYSORE.

Estimate No.4

ELECTRICAL DEPARTMENT.

Sivasamudram Section.

Estimate for High Tension Bank and Line Switches - W.O.A-4 & 5.

Names of materials, etc.	Unit.	Qty.	Rate.	Amount.
1. Insulators suspension 75 K.V.	No.	400	3 11 3	1,481 4 0
2. Post type insulators	"	11	33 4 0	365 12 0
3. Alcohol	Glns.	44	2 4 0	99 0 0
4. Compound special for cable joint	Lbs.	56	2 6 6	134 12 0
5. Solder	Lbs.	68	1 10 9	113 11 0
6. Floor brush, painting brush of sizes			L.S.	85 0 0
7. Oil transil No.6	Glns.	55	1 3 3	66 3 0
8. I-beam	No.	1	50 9 0	50 9 0
9. Paint Aluminium	Glns.	15	12 8 0	187 8 0
10. Wall entrance bushings, Cat.No.7B.644	No.	2	1500 0 0	3,000 0 0
11. Floor entrance bushings, Cat. No.9624	"	6	200 0 0	1,200 0 0
12. Bushings H.T. oil filled for S-1 line O.C.B.	"	3	1850 0 0	5,550 0 0
13. Bushings H.T. oil filled for S-1 line C.T. Transformer.	"	1	1850 0 0	1,850 0 0
14. Petrol	Glns.	5	2 2 0	10 10 0
15. Miscellaneous item such as rail pieces, sleeper, copper tube, Kerosine oil, waste, bamboos and sheets, etc.			L.S.	350 0 0
	Total		..	14,544 5 0
16. Stock Incidentals 4 6 1/4%				909 0 0
17. Labour charges			L.S.	1,400 0 0
18. Contingencies.			"	1,250 0 0
	Total		..	18,103 5 0

Or Say Rs.18,103/-

NDL.YSG.

GENERAL SUPDT: OF OPERATION.

Chief Electrical Engineer.

GOVERNMENT OF MYSORE.

ELECTRICAL DEPT. TENT.

Sivasamudram Section.

Estimate for High Tension Transformers at Sivasamudram, W.O. 1-6.

Names of materials, etc.	Unit	Qty.	Rate.	Amount.
1. Oil transil No. 10 C.	Glns.	13648	3 12 0	51,180 0 0
2. Insulators suspension	No.	38	3 8 0	133 0 0
3. Transformer current 800:1	"	2	103 9 6	207 3 0
4. Varnish G.	Tin.	1	10 14 0 0	10 14 0
5. Blotting paper.	Lbs.	39	1 5 0	51 3 0
6. Wire insulated 10 B&S H.T.	Ft.	100	13 9 0	13 9 0
7. Aluminium paint	Gln.	20	(per 100 ft. 12 8 0)	250 0 0
8. Miscellaneous items such as kerosene oil, waste, tiles, lamps, insulated wire, soap, gunny bags, brush, tape, sand paper, etc.			L.S.	50 0 0
		Total		51,895 13 0
9. Stock Incidentals at 6%				2,438 8 0
10. Labour charges			L.S.	250 0 0
11. Contingencies.			L.S.	50 0 0
		Total		R.S., 59 5 0

Or Say Rs. 50,439/-

Credits:

1. Oil transil No. 10 C. burnt out. Gln. 1120 N.V. ...

N.D.L. ISG.

GENERAL SUPDT: OF GL. TATION.

[Signature]
Chief Electrical En. r.

GOVERNMENT OF MYSORE.

ELECTRIC DEPARTMENT.

Sivasamudram Section.
Estimate for Bench-board and control wiring. W.O. A. 12

Names of materials, etc.	Unit.	Qty.	Rate.	Amount.
1. Slabs marble (local make).	No.	70	100 0 0	7,000 0 0
2. Slabs marble (foreign)	"	20	lot	534 1 0
3. Switch board instruments including ammeters, voltmeters, watt-meters, watt-hour meter, shunts, synchronising panel, frequency indicator, Over current relays, control switches current transformers for servicing 10 generators, 5 transformers, Banks, 4 exciters, 1 auxiliary and 6 lines.	Lot.	1		33,000 0 0
4. Six field breaker units for 5000 K.V. generators. Four field breaker units for 6000 K.V. generators. Four dead front cubicles for 250 K.V. Exciter.	"	1		1,32,000 0 0
5. Voltage regulators 2, generator field rheostats 10, Exciter field rheostats 4 Auxiliary current & potential Transformers for above complete.	"	1		50,000 0 0
6. Field Rheostats for Exciters.	No.	2(1. 409 13 0 (1. 546 6 0		.956 3 0
7. Rheostats for M.G. sets.	"	1	..	91 8 0
8. Resistance for wattmeter, etc.	"	10	43 14 10	439 4 0
9. M.G. set 5 K.V.A.	"	1	150 0 0	150 0 0
10. D.C. shunts	"	4	200 0 0	800 0 0
11. Relay P.B. 54 Instantaneous.	"	5	71 2 0	355 10 0
12. -do- P.B. 55, G.A.	"	4	32 9 6	130 6 0
13. Relay control type P from b.10, 25 cycles, 125-v., D.C.	"	1	28 14 0	28 14 0
14. Control switches, viz. Pull & push, rheostat control & Governor control.	"	65	lot	1,109 4 0
15. Lamp receptacles with lamps, bull's eyes, etc.	"		L.S.	270 0 0
16. Closing coils, trip coils, Tirril regulator coils & contacts discharge resistance, contacts, etc., for A.C. Breakers.	"		"	1,400 0 0
17. Bus bar copper.	Lbs.	456	0 4 6	128 4 0
18. Angle iron of sizes, channel iron, I-beams, flat iron, bolts & nuts of iron and galvanized.	"		L.S.	300 0 0
19. Bolt & Nuts of iron & Galva.	"		"	1,000 0 0
20. Solder.	Lbs.	100	2 8 0	250 0 0
21. Silver lead.	"	20	3 0 0	60 0 0
22. Cement asbestos sheets.	"	225	9 3 0	2,067 3 0
23. Cement	Cwt.	30	3 11 0	110 10 0
24. Porcelain cleats 3-way & 4-way	"		L.S.	8,000 0 0
25. Instrument potential transformers 2200-110-v.	"	10	150 0 0	1,500 0 0
26. M.C. 101 relays.	"	21	32 7 6	681 14 0
27. Auxiliary biasing transformers	No.	3	50 7 0	151 5 0
28. Control cable 6 core V.I.R.	Ft.	1445	0 7 7	684 14 0

29. Control cable 3-core V.I.R.	Ft.	995	0	5	7	222	15	0
30. -do- 2-core "	"	4255	1ct			785	14	0
31. Control cable 4-core	"	1350	-do-			259	5	0
		1952				578	3	0
32. L.C. cable with 6 B&S.	"	900	-do-			557	8	0
33. L.C. Cable 4-core.	"	36000	1200/- per 1000 ft.			50,400	0	0
34. L.C. Cable 4-core got in May 44.	"	3600	lot.			5,082	0	0
35. E.S.-Easte-4-core-geet steel armoured lead covered 5-core 7/.064	"	2500	"			2,805	0	0
36. Fire insulated No.2 B&S V.I.R.	"	3653	"			1,200	0	0
		1500	52 3 0 per 1000-ft.			78	4	0
37. Fire insulated No.10 B&S flame proof.	"	10000	lot.			2,500	0	0
38. -do- No.12 B&S.	"	1000	185 14 0			185	14	0
		1221	lot.			102	1	0
39. Miscellaneous materials such as paste, insulated wire, flexible cord, parnaite wire, copper scrap, paints, enamels, D.P. switches, fibre sheets, fibre rod, brush, H.S. blade, hemp, cord, T.W. reapers, petrol, linseed oil, tape, pig-lead and other unforeseen items.						L.S.	5,000	0 0
						Total	3,12,905	2 0
40. Stock incidentals at 64%							19,556	9 0
41. Charges for repairing 21 potential transformers, 37 current transformers, by Associated Elecl. Industries, Ltd., Calcutta.						L.S.	9,000	0 0
42. Charges for repairing the Tirril regulator by the Hindustan Aircraft Factory, Ltd., Bangalore.						-do-	1,250	0 0
43. Charges for repairing the M.G.sets by K.M.P.S.						-do-	750	0 0
44. Labour charges.						-do-	14,500	0 0
45. Contingencies.						-do-	7,500	0 0
						Total	3,65,461	11 0

Credits:-

1. Field Rheostats for Gen.10 & 11.No.	2				2,030	0	75%
2. -do- " No.3	1				200	0	
3. -do- " No.8	1				100	0	
4. -do- " No.4 & 5	2	50	0	0	100	0	
5. Field Rheostats for Exciters.	1				409	13	75%
6. M.G. sets, 5 K.V.A.	1				150	0	100
Field Rheostats for Exciters	3				922	2	75%
7. D.C. shunts.	4				800	0	100
8. Relay P.B. 54	5				258	11	75%
9. -do- P.B. 53 G.A.	4				93	12	"
10. -do- P from B-10	1				14	7	50%
11. Pull & push control switches	4	2	0	0	8	0	
12. Rheostat control switches.	14	10	0	0	140	0	
13. Governor -do-	6	8	0	0	48	0	
14. Control cable, 6-core V.I.R.	6	12	0	0	72	0	0
15. -do- 4-core	912				256	8	75%
-do- 6-core	5205				1,193	0	50%
-do- 4-core	338				80	2	50%
	2000				916	10	100%

4.8

16. Control cable, 3-core	"	750	122	0	0	75%
17. -do- 2-core	"	3000	421	0	0	75%
18. Wire insulated No.4 B&S	"	980	137	8	0	50%
19. Wire insulated No.2 B&S	"	1000	406	0	0	100%
20. Paranite cable	"	600	40	10	0	100%
21. Wire insulated No.10 B&S.	"	330	43	8	0	100%
22. Tirril Regulator.	No.	1	50	0	0	

total

9,013 11 0

Total Debits	..	Rs.3,65,451 11 0
Total Credits	...	9,013 11 0
Net debits		3,56,448 0 0

NLM. YSG.

GENERAL SUPD.: OF GENERATION.

12/9-
M. R. Arora
 Chief Electrical Engineer.

GOVERNMENT OF MYSORE.

Estimate No. 7
Sivasamudram Section.

ELECTRICAL DEPARTMENT.

Estimate for Interconnecting Transmission Lines (S & M -
Sections) W.O.A-14.

Names of materials, etc.	Unit.	Qty.	Rate.			Amount			Remarks
			Rs.	A.	P.	Rs.	A.	P.	
1. Rail S.M. 24' long 4 1/2-lb. Sectn.	No.	2	22	9	0	45	2	0	✓
2. -do-30' long 50 -lb. "	No.	4	16	13	0	67	4	0	✓
3. Pole steel of sizes.	Ft.	36	0	3	0	6	12	0	✓
4. Angle Iron Crossarms	No.	4	5	0	0	20	0	0	✓
5. Insulators pedestals	No.	12	16	13	9	202	5	0	✓
6. Clamps Parallel groove	Pr.	52	2	12	0	143	0	0	✓
7. Wire copper of sizes	Lbs.	119	0	9	6	70	11	0	
8. Miscellaneous items such as Bolts & Nuts, clamps, etc.			L.S.			25	0	0	
9. Stock Incidentals at 6 1/4%						36	4	0	
10. Labour charges.			L.S.			120	0	0	
Total			..			Rs. 736	6	0	or Rs 736/-

Credits:-

1. S.M. Rail 24' long	No.	2				22	9	0	50%
2. -do-30' long	No.	4				33	10	0	50%
3. Angle Iron Cross arms	No.	4				5	0	0	25%
4. Insulators Pedestals	No.	10				42	3	0	25%
5. Copper wire of sizes	Lbs.	80				22	8	0	
Total			..			Rs. 125	14	0	or say Rs 126/-

1. Total Debits	..	Rs. 736	0	0
2. Total Credits	..	126	0	0

Nett amount, of the Estimate. 610 0 0

NDM.YSG.

12/8-
GENERAL SUPDT. OF GENERATION.

Chief Electrical Engineer.

12/9/8

Government of Mysore.

Electrical Department.

Sivasamudram Section.Estimate for running L.T. Cables and D.C. Buses in Leanto at
Sivasamudram, Work Order.A-15

Names of materials, etc.	Unit.	Quauntity	Rate.	Amount.
				Rs. a.
1. Power cable L.C. 1-25	Ft.	29,517	7150 0 0	2,11,046 9
2. Cable 3-core H.T. for exciters and Auxiliaries.	"	1,200	5 0 0	6,000 0
3. Cable V.C. 1,500,000 C.M.	"	1,350	3 2 4	4,246 14
4.		500	2 10 6	1,421 14
		100	0 12 9	79 11
		39	scrap.	3 11
4. Cable V.C. 1,000,000 C.M.	"	4,028	2 4 1	9,084 0
5. Cable V.C. 750,000 C.M.	"	132	1 3 5	160 14
6. Cable V.C. 250,000 C.M.	"	2,500	1 6 5	3,515 10
7. Sealing ends for 1.25 Cable with 12 through joints, compound, tape, etc. complete.	No.	84	1.	8,500 0
8. Lower porcelain insulators of H-3 switches.	"	26	10 9 7	275 9
9. Insulators 13.2 K.V.	"	48	2 10 0	126 0
		250	7 10 5	1,914 1
10. Insulators bus bar vertical	"	362	15 10 9	5,673 4
11. Trefoil clamps ordered from Rly: workshop.(a)	"	1200	12 0 0	14,400 0
b. from supdt. of Generation	"	75	22 0 0	1,650 0
12. Sheet asbestos cement 6'x4'	"	475	9 3 0	4,364 1
13. Bus bar copper 2½"x½"	Ft.	500/1256	0 9 5	765 6
14. Cleats porcelain of sizes				2,750 0
15. Dolfret.	Lbs.	2000	2 8 0	5,000 0
16. Silver lead.	"	150	3 0 0	450 0
17. Bolts & Nuts and Bolts & Nuts grouting out of round iron and washers ordinary and spring of sizes.			L.S.	3,000 0
18. Copper scrap terminal of sizes.			L.S.	500 0
19. Filling compound.	Lbs.	566	lot.	283 0
20. Cable joint boxes for exciter cable and auxiliary.	No.	6	L.S.	1,500 0
21. Copper scrap.	Lbs.	4000	0 3 0	750 0
22. Brass scrap	"	1200	0 2 0	150 0
23. Lead scrap & sheets.	"	4000	0 2 6	625 0
24. Petrol	Glns.	50	2 2 0	106 4
25. Angle iron 3x5/16 2"x½" - 1½"x½" I-beam channel iron of sizes.	Cwts.	350	15 0 0	5,250 0
26. Flat iron of sizes.			L.S.	500 0
27. Cement.	Tons.	10	75 0 0	750 0
28. Miscellaneous materials such as waste, scaffolding materials, charcoal, steam coke, cement II Grade, cambric tape, paste, linen tape, brass rod, mason cord, tallow, glue and other unforeseen items.			L.S.	5,000 0
29. Workshop charges.			L.S.	4,000 0
				3,03,641 12
30. Stock Incidentals @ 6½%				18,977 10
31. Labour charges.			L.S.	17,000 0
32. Contingencies.			"	10,000 0

Total			..	Rs.3,49,619 6

Or Say Rs.3,49,620/-

P.T.O.

Credits:-									
1. Power cable L.C. 1.25	Ft.	300				28	4	0	Scrap.
Power cable L.C. 1.25	Ft.	8600				46,117	8	0	75
-do-	"	700				5,005	0	0	100
2. Cable T.C. 1,500,000 C.M.	"	1500	1-8-0			2,250	0	0	
3. " 1,000,000 "	"	2000				2,255	0	0	50
4. " 250,000 "	"	600				42	14	0	50
5. Lower porcelain insulators of H-3 Switches.	No.	54							scrap.
6. Insulators bus bar verticlas	"	30				470	5	0	100
7. Insulators for 13.2 K.V.	"	293				1,812	15	0	"
8. Copper scrap	Lbs.	1,52,542				27,005	10	0	scrap rate.
9. Iron scrap	"	7293				181	2	0	"
10. Suspension insulator.	No.	6				20	12	0	100
11. Aluminium scrap	Lbs.	62				11	0	0	scrap rate.
12. Brass scrap	"	873				109	0	0	"
13. T.W. casing and capping.	Rft.	515				45	0	0	"
		Total.				Rs.85,986	4	0	
Total debits.	.. 3,49,619 6 0								
Total credits.	85,986 4 0								
Net debits	Rs.2,63,633 2 0 Or Say Rs2,63,633/-								

NLM.YSG.

GENERAL SUPDT: OF GENERATION.

Chief Electrical Engineer

Estimate for supply of power to Kollegal - W.O.A-17

Names of materials, etc.	Unit.	Qty.	Rate.	Amount.
1. Rail & pole steel of sizes.	No.	6	lot	100 0 0
2. Cross arms of sizes ready made or angle iron or channel iron.	"			100 0 0
3. Insulators distribution 8 K.V.	"	50	3 1 4	154 3 0
4. -do- 13.2	"	6	8 0 0	48 0 0
5. Strain insulators 8 K.V.	No.	27	1 4 0	33 12 0
6. -do- 13.2 K.V.	"	12	2 3 0	26 4 0
7. Drop out cutouts 13.2 K.V.	"	3	30 0 0	90 0 0
8. Primary cutouts 6 x 243	"	15	25 4 0	378 12 0
9. Arresters Lighting, 3 K.V.	"	8	3 11 2	29 9 0
10. -do- 6 K.V.	"	3	22 6 8	67 4 0
11. Oil transil No. 10 C.	Glns.	370	3 12 0	1,387 8 0
12. Transformers 50 KVA, 13.2 to 4.6 K.V.	No.	3	1755 0 0	5,265 0 0
13. -do- 15 KVA. 13.2 to 4.6 K.V.	No.	3	1800 0 0	5,400 0 0
14. -do- 25 KVA. 4.6 to 230-115v.	"	2	560 0 0	1,120 0 0
15. Wire insulated 8 B&S H.T.	Ft.	200	1 0 6	206 4 0
16. -do- 4 "	"	400	1 5 6	537 8 0
17. Wire galvd. 8 B.M.G.	Lbs.	160	0 6 0	60 0 0
18. -do- copper No.6 B&S.	"	80	0 11 2	55 13 0
19. -do- No.7/.64	"	475	0 12 3	363 11 0
20. Porcelain cleats, big, 3-way.			lot.	75 0 0
21. Constructing a platform 3'x3'x22' of stone mortar & Cement.			L.S.	250 0 0
22. Miscellaneous items such as wire guy, insulated L.T. wire, solder, cambric tape, paste anchor sets, etc.			L.S.	200 0 0
23. Charges for repairing the 3 - 25 K.V.A. 13.2 to 2.3 and 4.6 K.V. Transformers burnt out, at Govt. Electric Factory.			L.S.	500 0 0
24. Stock incidentals at 5%			"	090 8 0
25. Labour charges			"	800 0 0
26. Contingencies.			"	500 0 0
Total				19,839 0 0

Credits:-

1. Insulators distribution 8 KV.	No.	70	161 14 0	75%
2. -do- 13.2 K.V.	"	3	18 0 0	75%
3. -do- strain 8 K.V.	"	15	14 1 0	75%
4. Drop out cutouts 13.2 K.V.	"	3	90 0 0	100%
5. Primary cutouts 6 x 243	"	6	113 10 0	75%
6. Oil transil. No. 10C.	Glns.	200	375 0 0	75%
7. Transformer 15 KVA. 13.2 to 4.6 KV.		3	5,400 0 0	100%
8. -do- 25 KVA. 13.2 to 230-115v.		2	1,120 0 0	100%
9. -do- 25 KVA. 13.2 to 4.6 and 2.3 KV.		3	3,487 8 0	50%
10. Wire insulated 8 B&S H.T.	Ft.	125	64 7 0	50%
11. Copper wire 6 B&S H.D.	"	200	104 11 0	75%
Total				10,949 3 0

Total debits .. Rs. 19,839 0 0
Total credits .. 10,949 3 0

Net debits .. 9,889 13 0 or Say Rs. 9,890/-

Estimate No.10

Sivasamudram Section.

Estimate for installing Telephones in Generating, Transformer &
Top Stations, W.C. No. A-18. 4

Names of materials, etc.	Unit.	Qty.	Rate.	Amount.
1. Rail S.M. & Pale steel of sizes	No.	6	L.S.	75 0 0
2. Cross arms 3-Pin, 4-Pin, 6-Pin ready made.			L.S.	275 0 0
3. Insulators & pins distribution	No.	250	3 1 4	770 13 0
4.		62	1 1 7	68 2 0
4. Wire galvd. 8BWG.	Lbs.	72	0 11 4	51 0 0
5. Wire copper No.10 B&S	"	1282	0 13 7	1,088 6 0
6. Wall telephones complete	sets	17	113 0 0	1,921 0 0
7. Wall telephones complete portable	"	3	143 15 0	431 13 0
8. Arresters Lightning vacuum gap	"	4	4 2 9	16 11 0
	"	38	9 2 3	347 6 0
9. Extension Bells	No.	10	10 0 0	100 0 0
10. Combined D.P.Switch with arresters complete.	Sets.	2	78 13 0	157 10 0
11. Telephone insulating Transformer 1:1 ratio.	No.	1	142 12 0	142 12 0
	"	2	150 0 0	300 0 0
12. Inert dry cells.	"	41	lot.	155 12 0
13. Combined receiver & Transmitter	Sets.	2	lot	38 3 0
14. Leclanche cells.	"	38	lot	224 11 0
15. Lead covered control cable 4 core Ft.		250	1400 0 0 (per thousand)	350 0 0
16. Constructing a room 10'x6' for mounting Insulating Transformers.			L.S.	250 0 0
17. Miscellaneous items such as Insulated Iron, D.P.S. Switches wall plugs, strain insulators, solder, etc.			L.S.	750 0 0
18. Stock incidentals at 6 1/2%				469 10 0
19. Labour charges.			L.S.	1,500 0 0
20. Contingencies.				424 3 0
		Total		9,908 0 0

Credits:-

1. Wire Galva: 8 B.W.G.	Lbs.	100	35 8 0	50%
2. Wire copper No.10 B&S.	Lbs.	282	239 8 0	100%
3. Wall Telephones complete.	Sets.	6	508 8 0	75%
	Total		783 8 0	

Total debits	..	Rs.9,908 0 0
Total credits	..	783 0 0
Net amount of Estimate		Rs.9,125 0 0

NDM.YSG.

GENERAL SUPDT: OF GENERATION.

Chief Electrical Engineer.

Government of Mysore.

Estimate No. 11.

Electrical Department. 46

Sivasamudram Section.

Tools and Plant -- Work Order No. A-19.

Names of materials, etc.	Unit.	Qty.	Rate.	Amount.
1. Tools & Plant articles.		L.S.		15,000-0-0

NDL-GH.

6/2/16

Under 12/8
Genl. Supdt. of Generation.

M. R. Arz
Chief Electrical Engineer.

Government of Mysore.

Estimate No. 12
Sivasamudram Section.

Electrical Department.

Fixing up lightning conductors for generating and transformer
Stations - W.O.A-20.

Names of ~~xxx~~ materials, etc.	Unit.	Qty.	Rate.	Amount.
1. Copper wire 3/0 B.&.S.	lbs.	2872	0-11-6	2,064- 4 ✓
2. -do- 2/0 "	"	536	0-12-0	402- 0 ✓
3. Copper scrap			L. S.	50- 0 ✓
4. Copper tubes and rods			L.S.	45- 0 ✓
5. Copper wire 7/16	Lbs.	55	0-12-4	42- 6 ✓
6. Copper finials	No.	3	5- 0-0	15- 0 ✓
7. Solder	lbs.	50	2- 6-0	118-12 ✓
8. Silver lead	"	16	2-11-0	43- 0 ✓
9. Miscellaneous items such as copper sheet terminals, coke, charcoal, paste, J-bolts, clamps, blades, keresene oil, sand paper, rope, salt, etc.			L. S.	125- 0 ✓
10. Workshop charges			L. S.	60- 0 ✓
~~11x~~ S		Total.		2,965- 6
11. Stock Incidentals at 6%				185- 5 ✓
12. Labour charges				125- 0
		Total.		3,275-11
13. Contingencies.			L.S.	25- 0 ✓
		Grand total.		3,300-11
		Or say Rs.3,301/-		

Credits:

1. Finials	No.	3	5- 0-0	15- 0-0 ✓
Net debits - credits Net amount.				
		3,301/-	15-0-0 =	Rs.3,286/- ✓

NDL-GH.

19/11

M. R. Arge
Chief Electrical Engineer.

General Supdt. of Generation.

Sivasamudram Section.

Power & Telephone Lines from Bottom Station to Forebay.
W.O.No.A-21.

Names of materials, etc.	Unit.	Qty.	Rate.	Amount.
1. Rail S.M. 30-ft. long	No.	2	14 9 6	29 3 0
2. -do- 24-ft. "	"	7	8 4 0	57 12 0
3. -do- 16-ft. "	"	1	4 11 0	4 11 0
4. Crossarms 3-pin	"	12	0 8 0	6 0 0
5. Insulators and pins 8 K.V.	"	33	2 13 0	92 13 0
6. -do- strain 13.2 K.V.	"	9	3 3 0	28 11 0
7. -do- 8 K.V.	"	33	1 0 0	33 0 0
8. Wire guy of sizes.	Lbs.	64	0 5 3	21 0 0
9. Wire G.I. 8 B.W.G.	"	195	0 11 6	140 3 0
10. Wire copper No.5 B&S or 7/0.64	"	330	0 12 3	252 11 0
11. -do- No.8 "	"	189	0 5 0	59 1 0
12. Arresters lightning, Pallet 3 to 6 K.V.	"	3	29 5 0	87 15 0
13. Miscellaneous items such as clamps clips, cement, binding wire, etc.			L.S.	75 0 0
				888 0 0
14. Stock Incidentals at 6 1/4%				55 8 0
15. Labour charges			L.S.	100 0 0
16. Contingencies.			L.S.	15 0 0
				1,058 8 0
		Total		

Or Say Rs.1,059/-

Sivasamudram Section.

Estimate for rewiring top and bottom station lighting and Telephone, signals, etc, W.O.A-22

Names of materials.	Unit.	Qty.	Rate.	Amount.
1. Motor D.C. 1/3 H.P.	No.	1	91 6 0	91 6 0
2. Cable V.C. 250,000 C.M., L.T.	Ft.	2500	1 0 0	2,500 0 0
3. Wire insulated No.2 B&S.	"	1500	43 0 0	645 0 0
-do-	"	8500	52 4 0	4,441 4 0
4. -do- 4 B&S	"	2500	25 0 0	625 0 0
5. -do- 4 B&S	"	2250	23 0 0	517 8 0
6. -do- 6 B&S	"	3000	27 0 0	810 0 0
7. -do- 8 B&S	"	900	17 6 4	156 9 0
8. -do- 10 & 12 B&S	"	20000	17 6 0	3,475 0 0
9. -do- 14 B&S.	"	3000	lot.	261 0 0
9. -do- released from control cable 7/19	"	7501	0 1 7	742 5 0
10. -do- twin flat No.12 L.T.	"	1334	0 1 3	138 15 0
11. Cable underground 6-core, 3/36 V.I.R.	"	300	0 10 0	187 8 0
12. Cable L.C.10 B&S, 4 conductor for signal circuit.	"	1000	1400 0 0	1,400 0 0
13. Bus bar insulators vertical	"	12	16 0 0	192 0 0
14. Parante wire twin	"	250	36 0 0	90 0 0
15. Fittings Ivanhoe.	No.	12	13 0 0	156 0 0
16. Trojan type fitting	"	6	12 0 0	72 0 0
17. Endura fittings	"	2	2 8 0	5 0 0
18. Fire bell alarm	"	4	95 0 0	380 0 0
19. D.P.S.T. & D.T. and T.P.S.T. switches mounted on marble slate	"	70	L.S.	750 0 0
20. Tumbler switches, 5 amps.	"	100	2 0 0	200 0 0
21. Wall plugs, 10 amps.	"	135	2 8 0	337 8 0
22. -do- 10 to 15 amps.	"	100	3 0 0	300 0 0
23. Lamps M.F.100 or 220-v of sizes	"	104	lot.	332 0 0
24. Batten holders. B.C.	"	80	1 0 0	80 0 0
25. B.C. Holders.	"	150	0 12 0	112 8 0
26. S.C. Mogal G.Holders	"	75	6 8 0	487 8 0
27. Revo reflectors 14"	"	60	7 4 0	435 0 0
28. Angular -do-	"	24	7 4 0	174 0 0
29. Conduit pipes of sizes	"		L.S.	300 0 0
30. Porcelain cleats of sizes	"	4750	"	10,000 0 0
31. Transformer 25 K.V.A. X 4.6 230-115v.	"	2	558 14 0	1,117 12 0
32. Ceiling fans	"	6	250 0 0	1,500 0 0
33. Table fans 110 & 220-v., 25Cys.	"	12	80 0 0	960 0 0
34. Miscellaneous materials such as insulator pins, wire copper, flexible wire, bell magnet, terminal copper, solder, silver lead, bolts and nuts, screws of sizes, cutouts D.P., etc.			L.S.,	5,000 0 0
Total				38,972 11 0
35. Stock Incidentals. at 6 1/2%				2,435 15 0
36. Labour charges.				3,000 0 0
37. Contingencies at 5%				2,220 0 0
Total				46,628 8 0

Credits:-

1. Wire insulated released from cable control 7/19	Ft.	3000	149 0 0	50%
2. T.W. casing and capping of sizes	Rft.	2000	lot 230 0 0	
3. Disconnecting switches 600 amps		9	" 13 8 0	
4. Steel armoured cable	Cwt.	14 1/2	scrap ---	
5. Copper scrap	Lbs.	184	34 8 0	

6. G.I. pipe $\frac{7}{8}$ " diar.	Rft.	241	70	4	0
	Total	..	497	4	0

Total debits	..	Rs. 46,628	8	0
Total credits.	..	497	0	0
		46,131	8	0
				or Say Rs. 46,132/-

NDM.YSG

GENERAL SUPDT: OF GENERATION.

Chief Electrical Engineer.

Names of materials, etc.	Unit.	Qty.	Rate.	Amount.
1. Cable V.C. 750,000 C.M.	Ft.	102	0 7 8	48 14 0
"	"	395	1 3 1	471 2 0
2. -do- 250,000 C.M.	"	400	139 9 5	558 4 0
3. -do- No.2 B&S. L.C.	"	760	0 13 0	617 8 0
4. Wire insulated 4 B&S. H.T.	"	600	actual	202 0 0
5. -do- 8 "	"	200	103 2 0	206 4 0
6. Insulators distribution.	"	24	1 7 0	34 8 0
7. Insulators bus bar.	"	12	3 9 0	42 12 0
8. Bus bar 2½" x ¼"	"	23'-8"	lot.	7 9 0
9. -do- 4" x ¼"	Lbs.	104	0 12 0	78 0 0
10. Pipe G.I. 3" dia.	Ft.	73'-3"	lot.	43 13 0
11. Arresters lightning 6 K.V.A.	No.	3	27 4 0	81 12 0
12. Cutouts primary 6 x 243	"	5	25 4 0	126 4 0
13. Cleats porcelain 3-Way.	Frs.	75	lot.	36 12 0
14. Current transformer 60:1	No.	4	24 10 6	98 10 0
15. -do- 40:1	"	2	25 0 0	50 0 0
16. -do- 30:1	"	4	12 0 0	48 0 0
17. Relays instantaneous	"	4	27 0 3	108 1 0
18. Solder	Lbs.	80	2 5 2	185 13 0
19. Silver lead	"	40	3 1 3	123 2 0
20. Miscellaneous items such as tape, angle iron, channel iron, D.P. Cutouts, terminals, etc.			L.S.	300 0 0

				3,469 0 0
21. Stock incidentals at 6½%			..	217 0 0
22. Labour charges			..	300 0 0
23. Contingencies.			..	200 0 0

			Grand total	4,186 0 0

Credits:-

1. Arresters lightning, 6 KV.	No.	3	27 4 0	81 12 0
				(100%)

Total debits	..	Rs. 4,186	0 0
Total credits	..	82	0 0

Net debits	..	Rs. 4,104	0 0 ✓

NDM.YSG.

GENERAL SUPDT: OF GENERATION.

[Signature]
Chief Electrical Engineer.

ln
9/16

30

Estimate No.16
Sivasamudram Section.
Running a net work of ground wire in the Generating,
Transformer and Top Stations.W.O.A-35.

Names of materials, etc.	Unit.	Qty.	Rate.	Amount.
1. Wire copper No.3/0 B&S. •	Lbs.	3,500	0 12 6	2,734 6 0
2. -do- 2/0 "	"	1,450	0 11 0	996 14 0
3. Copper plate	No.	2	87 15 0	175 14 0
4. Copper scrap	Lbs.	125	0 7 0	54 11 0
5. Solder	"	350	2 4 0	787 8 0
6. Silver lead.	"	30	2 1 0	61 14 0
7. Cement	Cwt.	25	3 11 0	92 3 0
8. Miscellaneous items such as coal steam, bolts & Nuts, Charcoal, iron round, Paste waste, terminals, etc.			L.S.	400 0 0
		Total		5,303 6
9. Stock Incidentals at 6½%				331 7
10. Labour charges.			L.S.	1,500 0
11. Contingencies.			L.S.	50 0
		Total		7,184 13

Or Say Rs.7,185/-

NLM. YSG.

19
GENERAL SUPDT: OF GENERATION.

MR. A. S. -
Chief Electrical

Sivasamudram Section.

Estimate for installing Low Tension Switches - W.O. A-36

Names of materials.	Unit	Qty.	Rate.	Amount.
1. O.C.B. 4000 amps., 2300-V	No.	4	21,000 C 0	84,000 0
2. " 2000 " -	"	6	14,850 C 0	89,100 0
3. " 1200 " -	"	7	4,900 C 0	34,300 0
4. " 800 " -	"	2	12,250 C 0	24,500 0
5. Disconnecting switch parts 4000 amps. mounted on marble base.	"	7	lot	2,511 12
6. " " 2000 Amps.	"	8	lot	740 10
7. " " 800 Amps.	"	4	lot	80 0
8. Angle iron 3"x3"x5/16", 2"x2"x1/4" 1 1/2"x1 1/2"x1/4" flatiron of sizes in- cluding leg supports for L.T. Switches.			L.S.	2,500 0
9. M.S. rounds of sizes.	Lbs.	4000	L.S.	600 0
10. M.S. Plates.	Ft.	150	1 C 0	168 12
11. Galvd.pipes with bends,wheel valve,etc.	Ft.	375	lot	200 0
12. White paint ready mixed.	Cwt.	35	59 C 0	2,065 0
13. Wire cut bricks.	No.	20000	60 C 0	1,200 0
14. Wire copper No.2/0	Lbs.	212	0 10 3	135 13
15. -do- 3/0	"	225	0 10 7	176 15
16. Jelly stone	Cyd	96	5 C 6	507 0
	"	20	8 C 0	160 0
17. Sand	"	77	3 C 0	250 4
17. Sand	"	25	4 C 0	100 0
18. Bolts & Nuts, washers ordinary & spring washers of sizes.			L.S.	1,500 0
19. Copper bus bar 4" x 1/4"	Ft.	6200	0 10 9	16,662 8
	Lb.	24800		
20. Bus bar insulators flat mounting.	No.	342	10 C 0	3,420 0
	"	233	12 C 0	2,912 8
21. -do- with cleats, 2 petticoats.	"	63	3 11 3	234 15
22. -do- flat with 2 petticoats.	"	71	15 12 10	1,126 6
23. -do- with aluminium clap for 3" bus.	"	6	6 10 3	40 0
24. -do- verticle mounting.	"	96	16 8 0	1,584 0
25. Porcelain beads for bus bar.	"	1000	6 0 0	6,000 0
26. Rectangular clamps.	Prs.	150	10 C 0	1,500 0
27. Clamps triangular iron from stock.	No.	32	0 9 0	18 0
28. -do- gun metal & bras.	Sets	11	3 3 1	35 2
29. Materials for manufacturing clamps for bus insulators, terminals for O.C.B.,copper strips, for expansion joints,etc.				
a. Copper scrap	Lbs.	5000	0 3 C	937 8
b. Brass scrap	"	2000	0 2 C	250 0
c. Aluminium scrap	"	1250	0 3 C	234 6
30. Solder.	"	100	2 8 C	250 0
31. Cement	Tons	50	75 0 C	3,750 0
32. Miscellaneous materials such as sheet iron, channel iron, knife switches of sizes, I-beam,rail pieces, cleats porcelain of sizes, electrodes, spindle oil, paste, waste, charcoal, coal steam, sand paper, japan, tape, grease, rope, bamboos, baskets, weld mesh and other unforeseen items.			L.S.	5,000 0
33. Stock Incidentals at 6 1/4%				18,047 0

34. (a) Workshop charges for preparing clamps and top supports, etc.	}	L.S.	1,500	0	0
(b) -do- for preparing copper strips and terminals.					
(c) -do- for preparing expansion joints.					
35. Labour charges.		L.S.	16,000	0	0
36. Contingencies.		L.S.	15,000	0	0
Total			3,43,098	7	0

Credits:

1. Insulators, bus bar white 2 petti coat.	No.	90	12	0	0	1,080	0	0
2. -do- brown	"	100	2	8	0	250	0	0
3. Copper scrap	Lbs.	1100				214	0	0
4. Iron scrap	"	137				1	0	0
5. Brass scrap	"	1530				190	0	0
6. Aluminium scrap	"	103				19	0	0
7. Pipe iron scrap		lot				9	0	0
Total						1,763	0	0

Total Debits	..	Rs.3,43,098	7	0	
Total Credits	..	1,763	0	0	
Net Debits	..	Rs.3,41,335	7	0	Or Say Rs.3,41,335/-

NDM.YSG.

GENERAL SUPDT: OF GENERATION

M. R. Arora
Chief Electrical Engineer.

Estimate No. 18.

Government of Mysore. Sivasamudram Section. Electrical Department.

Running control cables and D.C. cable from
bottom Station to Forebay - W.O. No. A-43.

Names of materials, etc.	Unit.	Qty.	Rate.	Amount.
1. 4 core, No.10 B&S, lead sheathed, steel armoured, jute served cable.	Ft.	8,000	2- 8-0	20,000- 0 ✓
2. Cable 250,000 G.M. single core, lead sheathed, steel armoured jute served.	Ft.	2,500	4- 0-0	10,000- 0 ✓
3. ~~Various~~ Miscellaneous materials such as knife switches, control switches, cutouts, angle iron flat iron, solder, paste, junction boxes, etc. and other unforeseen items.			L.S.	2,500- 0 ✓
				Rs. 32,500- 0 ✓
4. Stock Incidentals at 6 1/2%				2,031- 4 ✓
5. Labour charges			L.S.	1,500- 0 ✓
6. Contingencies at 5%				1,801- 9 ✓
Grand total.				Rs. 37,832-13 ✓
Or say Rs. 37,832/-.				

DL-GH.

Chandrasekhar
General Supdt. of Generation.

M. R. Arora
Chief Electrical Engineer.

19/11/43

EST. no 3.
ABSTRACT OF ESTIMATES : - REHABILITATION -
 (Civil Engineering.)

54

Rs.

- | | |
|---|----------|
| 1. Constructing temporary sheds during Rehabilitation at Siva., as per Abstract 'A' | 2,070 |
| 2. Rehabilitation of Generating Station at Sivasamudram, as per Abstract Estimate 'B' | 1,27,200 |
| 3. -do- Top Station at Siva., as per abstract estimate 'c' | 87,700 |

T o t a l 2,16,970

12/5 BKR.YSG.

GENERAL SUPDT: CF GENERATION.

Certified that I and the Sub Engineer have visited the spot & prepared the estimate on current market rates providing for the most economical & safe way of executing the work - rates & budget rates are same -

M. R. Arora
 Chief Electrical Engineer.

12/5

Estimate No.A.

Constructing temporary sheds during rehabilitation works
at Sivasamudram. (W.O.No A-7)

53-

Names of materials, etc.	Unit	Quantity	Rate	Amount	Remarks.
<u>A:- For storing oil barrels.</u>					
1. Poles cassurina	Each	70	2 0 0	140 0 0	
2. Bamboos thick	"	32	0 8 0	16 0 0	
3. G.I. Sheets of sizes	"	100	Scrap	- - -	
4. Miscellaneous materials such as thick and thin coir rope etc.			L.S.	50 0 0	
5. Stock Incidentals on items 1 to 3				12 8 0	
6. Labour charges for putting up the shed and dismantling the same after the works.				50 0 0	
Total				268 8 0	or 270/-
<u>Credits:-</u>					
Poles Cassurina & Bamboos		100	Scrap	- - -	
G.I. Sheets.		100	Scrap	- - -	
Nett Amount of the Estimate					270-0-0
<u>B:- For feeding and cooking arrangements during Rehabilitation.</u>					
(W.O.No.A-16)					
2 of 50'x15', 2 of 10'x12', 1 of 18'x64' & 1 of 30'x15'					
1. Wodden poles 15'-20'	Each	14	2 0 0	28 0 0	
2. Billets 8'	"	80	1 8 0	120 0 0	
3. Cassurina poles of sizes	"	43	2 0 0	86 0 0	
4. Pillars of sizes iron 9"	"	6	2 0 0	12 0 0	
5. Bamboos thick	"	400	0 4 0	100 0 0	
6. Bamboos thin	100	3	5 0 0	15 0 0	
7. Bamboos mats	Each	400	0 8 0	200 0 0	
8. G.I. Sheets of sizes	"	1100	Scrap	- - -	
9. Miscellaneous materials such as rope coir thick & thin, wire nails, G.I. bolts, wicks for lantern, spare maties for petro- max including temporary water supply, etc.			L.S.	500 0 0	
Total				1,061 0 0	
Stock incidentals at 6 1/2%				66 0 0	
				1,127 0 0	
10. Labour charges for putting sheds and dismantling when done with			L.S.	660 0 0	
Total				1,787 0 0	or 1800/-
<u>Credits:-</u>					
1. Sheets Galvanised of sizes.	Each	1040	Scrap	- - -	
2. Pillars iron of sizes		6	Scrap	- - -	
3. Cassurina poles & billets			Scrap	- - -	
Total Credits.				Nil	
Nett amount of the Estimate					1800/-
Total of Estimates A & B of Main Estimate 'A' - Rs.270 Plus Rs.1800 = Rs.2070/-					

BKR.YSG.

GENERAL SUPDT: OF GENERATION.

Chief Electrical Engineer.

Estimate for the Rehabilitation of Generating Station at Siva.

Names of materials, etc.	Unit.	Quantity.	Rate.	Amount	Remarks
1. Bracing the Trusses with bamboos, thick rope coir, old pipes, etc., to secure them in position including heavy scaffolding.			L.S.	300 0 0	
2. a. Removing the burnt out debris etc., in the Generating and Transformer Stations.			L.S. (as per actuals)	1,500 0 0	
2. b. Removing the debris collected in the rear of Generating Station, and Transformer Station and conveying the same over a lead of one furlong and lift of 40'			-do-	1,500 0 0	
3. Putting up temporary barricades and roof over the machines in the Station to prevent loose materials dropping down and damaging the equipment in the Station.				300 0 0	
4. Dismantling the size stone in mortar masonry at a height of 30' to provide for the new roof.	Cft.	2500	0 6 0	937 0 0	
5. Aligning the Trusses and bringing the same to plumb.	Each	36	25 0 0	900 0 0	
6. Hoisting Angle Iron Purlins 3"x3"x5/16, including making new cleats, drilling holes, etc., including painting.	Cwts.	646	28 0 0	18,088 0 0	
7. Removing old iron M.S. sheet hoods at the ridge and lowering the same in restricted area.	Each	56	10 0 0	560 0 0	
8. Truing the above and re-fixing the same including hoisting over a lift of 40' and lead of 400' and making necessary lap joints with gunny cloth and tar.	Each	56	20 0 0	1,120 0 0	
9. Providing and fixing 24 B.W.G. G.I. Sheets roofing using lead washers & G.I. bolts, 'J' bolts with a lap of 3 corrugation at sides & 1" at ends.	Sqrs.	353	70 0 0	24,710 0 0	
10. Constructing stone & brick masonry in cement mortar, 1:6: after dismantling & preparing damaged portions including a lift of 30' and working in narrow areas.	Cft.	2100	0 12 0	1,575 0 0	

11. Removing the grouted pipe pieces by chistling, etc., and refilling the holes with cement mortar masonry.	Each.	400	0	8	0	200	0	0
12. Raking the old surki mortar pointing 1½" to 2" deep with scaffolding, etc.	Sqr.	250	4	0	0	1,000	0	0
13. Deep cement mortar pointing with 1:3 cement mortar including packing bricks where ever required.	"	250	8	0	0	2,000	0	0
14. Cement washing the walls of Generating & Transformer Stations.	"	761	1	0	0	761	0	0
15. Repairs to flooring of Generating Station where ever needed, laid on a bed of cement plaster 1:6 and cement pointed.	"	150	10	0	0	1,500	0	0
16. Removing the existing wooden windows and doors including high scaffolding including breaking masonry at horns, etc.	Sft.	4090	0	12	00	43,068	10	00
17. Providing and fixing windows, doors and ventilators with angle iron frames and asbestos shutters including all fixtures, etc., complete.	"	6843	3	0	0	20,529	0	0
18. Painting with approved paint the doors, windows and ventilators of Generating Station.	Sqrs.	140	7	0	0	980	0	0
19. Painting with white lead paint 2 coats the ceiling of Transformer Station.	"	253	9	0	0	2,106	0	0
20. Painting the G.I. Sheet roof of Generating & Transformer Stations with dull green & brown paints.	"	547	4	0	0	2,188	10	00
21. Painting with white lead paint the walls of Generating and Transformer Stations including high scaffolding.	"	840	8	0	0	6,720	0	0
22. Providing Binding walls over roof.	L.S.	500	0	0	0			
23. Providing & fixing 1½"x1½"x½" angle iron and fixing the same with 'J' Bolts where ever required and filling the holes with chalk powder and linseed oil, etc., for binding Generating Station roof.	Cwt.	75	35	0	0	2,625	0	0
24. Dismantling the old L.T. Switch & Bus compartment brick including conveying debris over								

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over a lead of 400' & lift of 40'.(as per seperate Estimate 'a')				1,200	0	0
25. Providing and fixing iron ladders in the place of old wooden stairs.(as per seperate Est.'b')				6,800	0	0
26. Providing drains in the transformer station for leading out oil fires.(as per seperate Est.'e')				1,200	0	0
27. Providing and fixing wire netting rabbit mesh to windows of H.T.Switch & line floors with asbestos battens.	Sft.	3000	0 12 0	2,250	0	0
28. Providing R.C.C. Slabs over gang ways.(as per seperate Est.'c')				~~3390-0-0~~ ~~3,300-0-0~~		
29. Dismantling the cable duct.(as per seperate Est.'d')				3,900	0	0
30. Reconditioning the drains in the rear of Generating Station with cement point- ing, etc.			L.S.	4,000	0	0
31. Miscellaneous & other un- foreseen works.			L.S.	~~829-0-0~~ ~~1,000-0-0~~		
Contingencies at 5%				1,20,407	1,20,352	0 0 0
Petty supervision				6020	6,017	0 0 0
				2988	2,988	0 0 0
				<u>1,29,415</u>		
				Grand Total	~~1,29,357~~	~~0 0 0~~

Credits:-

1. G.I. sheets of sizes	300	Scrap	-	-	-
2. -do- -do-	300	0 8 0	150	0	0
3. T.W. doors and windows reused	Sft. 4090	0 8 0	2,045	0	0
Total credits.	..	...	2,195	0	0
			Balance	~~1,27,162~~	~~0 0 0~~
			Or Say Rs.1,27,200/-	1,27,220/-	or

BKR.YSG.

GENERAL SUPDT: OF GENERATION.

M. R. Arora
Chief Electrical Engineer

ESTIMATE 'a'

Estimate for dismantling the old L.T. Switch & Bus compartments of
of Brick in Cement Mortar.
(vide item 24 of Main Est.)

Names of materials, etc.	Unit.	Quantity.	Rate.	Amount	Remarks.
1. Miscellaneous materials such as steam coal bamboos thick & thin cair rope, bamboo baskets & Octogonal steel, etc.			Lump Sum.	100 0 0	
2) Labour for dismantling masonry and switches and conveying debris over a lead of 400' and lift of 40'				1,100 0 0	
			T o t a l	1,200 0 0	

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M. R. Aray
Chief Electrical Engineer.

Ch. Srinivas
GENERAL SUPDT: OF GENERATION.

3. Labour charges for hoisting
including grouting and dis-
mantling the existing wooden
stairs.

Lump sum	800 0 0
T o t a l	6,867 0 0

C r e d i t s:

Wooden stairs

Lump sum	100 0 0
----------	---------

Net amount of Estimate.

..	5,767 0 0
or	6,800 0 0

M. R. Aray
Chief Electrical Engineer.

Ch. Srinivas
GENERAL SUPDT: OF GENERATION.

GOVERNMENT OF MYSORE.

ELECTRICAL DEPARTMENT.

Estimate 'c'

For providing R.C.C. slab for the Gang Way on the river side of
Generating Station, Work Order
No.A-34.

Names of materials, etc.	Unit.	Quantity.	Rate	Amount	Remarks.

1. Casting R.C.C. slabs 2" thick using 3/8" & 1/4" rods, sizes to suit the spans of girders on the river side of Genera- ting station and conveying the same over a lead of 400' and laying in position in- cluding clamping them to- gether with necessary clamps. Sft.		2850	1 0 0	2,850-0-0	
2. Miscellaneous materials such as gunny bags, grease & bind- ing wire, etc.		Lump sum		150-0-0	
3. Dismantling the burnt out wooden planking.		-do-		390-0-0	
		T o t a l		~~3,390-0-0~~ 3390-00	

C r e d i t s :

Burnt out planks.

1 lot.

Scrap

Nett amount of the Estimate

M. A. Arys
Chief Electrical Engineer

Chapman
General Superintendent of Generation

~~3,390-0-0~~ 3390/-
Alth

Estimate No.'d'

For dismantling the cable duct connecting the bottom and top
stations at Sivasamudram. (vide item 28 of Main Est.)

Work Order No. A-33

Names of materials, etc.	Unit.	Quantity	Rate	Amount	Remark

1. Dismantling brick & stone masonry in surkhi mortar and forming debris on hill side.	Cft.	22,800	0 2 0	2,850 0 0	
2. Constructing revetments on hill side to retain the above		Lump sum		750 0 0	
3. Removing burnt out cables, etc.		-do-		300 0 0	
		T o t a l		3,900 0 0	

BKR.YSG.

[Signature]
Chief Electrical Engineer.

[Signature]
GENERAL SUPDT: OF GENERATION.

For providing oil drains in the Transformer Station for leading out
 Burnt Oil. W.O.No.A-37
 (Vide Item No.29)

Names of materials, etc.	Unit	Quantity	Rate	Amount	Remarks.
				Rs.	
1. Dismantling the stone masonry and cement concrete including removal of debris over a lead of 500 feet.	cft.	900	0-6-0	338 0 0	
2. Fixing lintels and grouting with cement concrete 1:2:4 including rail or angle iron lintel.	each.	13	20-0-0	260 0 0	
3. Constructing the drain 12"x 12" with cement concrete 1:2:4 & $\frac{1}{2}$ " thick cement plaster alround.	Rft.	172	1-8-0	258 0 0	
4. -do- 9"x9"	"	112	1-4-0	140 0 0	
5. R.C.C. slabs $1\frac{1}{2}$ " thick.	Sft.	191	1-0-0	191 0 0	
T o t a l				1,187 0 0	or .1200/-

BKR.YSG.

M. R. Srinivas
 Chief Electrical Engineer.

Ch. Srinivas
 GENERAL SUPDT: OF GENERATION.

Details for the Rehabilitation of Generating Station at Sivasamudram.

Names of materials, etc.	No.	L.	B.	D.	Quantity.
1. Bracing the trusses with bamboos thick, coir rope, old pipe, etc. to secure them in position including heavy scaffolding.					L.S.
2. Removing the burnt out debris etc. in the Generating and Transformer Stations.					L.S.
2. b. Removing the debris collected in the rear of Generating station and Transformer station and conveying the same over a lead of one furlong and lift of 40'.					L.S.
3. Putting up temporary barricades and roof over the machineries in the Station to prevent loose materials dropping over them.					L.S.
4. Dismantling the size stone in mortar masonry at a height of 30' to provide for the new roof.					
Longitudinal walls of Generating station.	3	450'	1½'	1	2,025
-do- of Transformer Stn.	1	140'	1½'	1	210
Extra at gable wall					265

					Total in C.S. 2,500

5. Aligning the trusses and bringing the same to the plumb.					36 Nos.
6. Hoisting angle iron purlins 3"x3"x5/16" including making new cleats etc., and painting.					
Purlins of Generating Stn.	18	453	6.1 Lbs		49,739 Lbs.
Rafters of Gen. Stn., lean to 2"x2"x½"	80	14	3.2 Lbs		
2"x2"x½" Purlins of lean to	4	453	3.2 "		
-do- Blower room rafter and purlin	1	260	3.2 "		
Transformer lean to rafter - 2"x2"x½"	25	14'	3.2 "		
Purlins -do-	4	140'	3.2 "		
Brackets on the riverside 2x2"x½"	48	7	3.2 "		17,027 Lbs.
Purlins -do-	1	453'	3.2 "		
Auxiliary room -do-	6	20	3.2 "		
-do- -do-	5	24	3.2 "		
-do- -do-	5	10	3.2 "		
Binding walls	1	140	3.2 "		
Extra angles 2½"x2½"x½" and 1½"x1½"x½" for splicing purlins					2,240 Lbs.
Gusset plates, and bolts, etc.					3,360 Lbs.

					Total 72,366 Lbs.
					or 646 Cwts.
7. Removing old iron M.S. sheet hoods at the ridge and lowering the same in restricted area.					56 Nos.

8. Truing the above and refixing the same including hoisting over a lift of 40' and lead of 400'

56 Nos.

9. Providing and fixing 24 B.V.G G.I. Sheets roofing using 'J' bolts, etc.

Generating Station river side	1	453	29'	13,137
Hill side	1	453	42'	19,026
Transformer lean to	1	137	14	1,918
Auxiliary room	1	27	19	513
-do- -do-	1	9 $\frac{1}{2}$	11	102
Blower room roof	2	22	14	616

Total in Sq.ft. 35,312
or 353.00 Sqrs.

10. Constructing stone & brick masonry in cement mortar after dismantling damaged portion.

In the gap between wall & roof	2	453	1 $\frac{1}{2}$	1,359
Transformer Station lean to	1	137	1 $\frac{1}{2}$	206
Ventilators openings	24	4	1 $\frac{1}{2}$	360
window in end wall	1	5	2	80
Arch way	1x $\frac{1}{2}$	II/2	25	11
Extra				84

Total in Cft. 2,100

11. Removing the grouted pipe pieces and refilling the holes with cement mortar.
In the lean to roof and Generating & Transformer Stns.

400 Nos.

12. Re-pointing the old surki mortar pointing 1 $\frac{1}{2}$ " to 2" deep including scaffolding.

Generating Station lean to

walls	1	450	25'	11,250
-do- -do-	1	450	22	9,900
Transformer-do-	1	120	9 $\frac{1}{2}$	1,140
Over the crane girder	1	450	6	2,700

Total in Sq.ft. 24,990
or 250.00 Sqrs.

13. Deep cement mortar pointing with 1:3 including packing brick where ever required. (as per the above area)

250.00 Sqrs.

14. Cement washing the walls of Generating station, etc.

Long. walls	2	450	27	24,300
End walls	2	32	27	1,728
Lean to (cable room)	1	450	25	11,250
-do- -do-	1	450	22	9,900
End walls	2	8	27+25	416
Gables of Generating Station	2	32	11	352
Transformer lean to	1	120	12 $\frac{1}{2}$	1,500
-do- -do-	1	120	9 $\frac{1}{2}$	1,140
End walls	2	8	12 $\frac{1}{2}$ +9 $\frac{1}{2}$ /2	176
Bench board floor	2	185	25 $\frac{1}{2}$	9,435
L.T. floor	2	126	15	3,780
Bank switch floor	2	185	24	8,880
Ends	2	38	24	1,824
Gables	2x $\frac{1}{2}$	38	13	494
Line floor	2	185	21	7,770
Gables	2x $\frac{1}{2}$	38	13	494

Total in Sq.feet. 83,439

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Deduct for:-

Opening of doors of Gen.Stn.	7	6	-	10	420
Arches ..	7x $\frac{1}{2}$	11/4	36		99
Windows ..	15	6		8	720 ✓
Arches ..	15x $\frac{1}{2}$	22/7	36/4		212 ✓
By openings in south walls	2	12		12	288
Arches ..	2x $\frac{1}{2}$	22/7	144/4		113
Generating Station Western walls	14	3 $\frac{1}{2}$		8	420
-do- -do- ..	4	4 $\frac{1}{2}$		8	152
-do- -do- ..	4	6		8	192
-do- -do- ..	2	5		8	80
Towards wall in transformer station.	1	12		7	84
	1x $\frac{1}{2}$	22/7	144/4		57
Transformer bay	14	5		8	560 ✓
Arches	14x $\frac{1}{2}$	22/7	25/4		138
Big door	1	12		16	192 ✓
Opening near panel Board	3	9		18	486 ✓
Big window -do-	1	9		7 $\frac{1}{2}$	68
Arches ..	1x $\frac{1}{2}$	22/7	81/4		32
	1	8 $\frac{1}{2}$		16	136
-do- L.T. bus room	11	4		5	220
Arches	11x $\frac{1}{2}$	22/7	16/4		69
-do- H.T. switch floor	26	5		8	1,040
Arches ..	26x $\frac{1}{2}$	22/7	25/4		255
Line floor	24	5		8	960
Arches ..	24x $\frac{1}{2}$	22/7	25/4		220
Door in front of trolley landing ..	1	7		13	91
Extra for sides of doors & windows ..					1,006
Total deduction in Sq.ft.					8,310
Balance cement washing .. 83,439-8310					75,129 Sq.ft.
					or 751.00 Sqrs.
Add for extras					10.00 Sqrs.
					761.00 Sqrs.

15. Repairs to flooring of the Generating Station, Generating Station ..

Cable lean to	1	450'	32'	14,400
Transformer lean to	1	120	8	960

Total 18,960

Deduct for machinery portion

5,400

Balance in sq.ft.

13,560

Extras in the other floor

1,440

Total in square feet.

15,000

or 150.00 Sqrs.

16. Removing the existing wooden windows and doors including high scaffolding including breaking masonry.-

Transformer repair bay windows	2	4	5 $\frac{1}{2}$	44
Arches ..	2x $\frac{1}{2}$	22/7	16/4	13
Big door	1	12	17	204
Windows ..	3	5	8	120
Arches ..	3x $\frac{1}{2}$	22/7	25/4	29
Battery room door	2	4	8	64
Transformer bay door	1	12	16	192
Towards trolley	1	7	13	91
Windows ..	14	5	8	560
Arches ..	14x $\frac{1}{2}$	22/7	25/4	139
H.T. Switch floor and line.	47	5	8	1,880
Arches floor	47x $\frac{1}{2}$	22/7	25/4	460

Blower room window	4	4	6	96
Door	2	8	10	160
-do-	1	4	8	32
Arches	1x2	22/7	16/4	6
Total in sq.ft.				4,090

17. Providing and fixing windows doors and ventilators with angle iron frames & cements shutters including all fixtures.

Line floor windows	24	5	8	960	
Arches	24x $\frac{1}{2}$	22/7	25/4	236	
H.T.Switch floor	26	5	8	1,040	
Arches.	26x $\frac{1}{2}$	22/7	25/4	256	
L.T.Bus floor	11	4	5	220	
Arches	11x $\frac{1}{2}$	22/7	$\frac{16}{25}$ /4	138 69	
Transformer workshop	3	5	8	120 560	
Arches	3x $\frac{1}{2}$	22/7	25/4	29 138	
Windows	14x5x8	2	4	44	
Arches	14x $\frac{1}{2}$ x $\frac{22}{7}$ x $\frac{25}{4}$	2x $\frac{1}{2}$	22/7	16/4	13
Near panel board	1	9	7 $\frac{1}{2}$	68	
Arches	$\frac{1}{2}$	22/7	81	128	
-do-	1	8 $\frac{1}{2}$	16	136	
Windows of generating Stn.	15	6	8	720	
Arches	15x $\frac{1}{2}$	22/7	36/4	212	
Windows of Blower room	4	4	6	96	
Doors	2	8	10	160	
-do-	1	4	8 $\frac{1}{2}$	32	
Arches	1x $\frac{1}{2}$	22/7	16/4	6	
Gen: Station ventilators and sun shades	24	4	2 $\frac{1}{2}$	240	
Doors of Gen: Station	7	6	10	420	
Arches	7x $\frac{1}{2}$	22/7	36/4	99	
Transformer repair shop	1	12	17	204	
Battery room	2	4	8	64	
Oil room	1	8	10	80	
Battery charging	1	4	6 $\frac{1}{2}$	26	
Inside the Generating Stn.	2	3 $\frac{1}{2}$	7	49	
Transformer Stn. Big door	1	12	16	192	
Trolley side	1	7	13	91	
-do-	1	6	8	48	
Transformer lean to	1	3	6	18	
Auxiliary room	1	4	6	24	
Ex t r a s				45	
T o t a l in Sft.				6,843	

18. Painting with approved paint

2 coats.

(Twice the area under item (17) 6843 x 2 = 13,686 Sft.
or 140.00 Sqr.

19. Painting with white lead paint

2 coats.-

Ceiling of Station (line floor roof)	2	185	23	8,510
H.T.Switch floor	1	185	38	6,030 7030
Ceiling Transformer bay & panel.	1	185	37	5,845 6845
Ceiling bay repairs	1	37	29	1,073
Switch & floor ceiling	1	126	15	1,890

Total in Sft.

23,348 25348
or 234.00 Sqr.

20. Painting the G.I. Sheet roof of Generating Station with required paint.

Transformer Station	2	192	23	8,832
As per area of G.I. Roof vide item.9 of this Estimate				35,300

Roof of Transformer Station 2 185 25 9,250
 -do- Workshop 1 42 32 1,344

T o t a l 54,726
 or 547.00 Sqrs.

21. Painting with white lead paint including high scaffolding.- Generating & Transformer Stations, as per cement wash Item 14)

Transformer workshop 1 37 65 76,100
 -do- -do- 2 29 65+60/2 2,405
 -do- -do- 1 37 60 3,625
 2,220

Total in Sft. 84,350

- Deduct for opening in.- workshop.

Windows .. 1 12 17 204
 Arches .. 3 5 8 120
 -do- small .. 3X $\frac{1}{2}$ 22/7 25/4 29
 Arches .. 2 4 5 $\frac{1}{2}$ 44
 2X $\frac{1}{2}$ 22/7 16/4 13

Total 410

Balance calcarium painting .. 84350-410 .. 83,940 Sqft.
 E x t r a .. 60

T o t a l 84,000
 or 840.00 Sqrs.

22. Providing binding wall over the Generating station roof.

Lump sum.

23. Providing and fixing 1 $\frac{1}{2}$ x1 $\frac{1}{2}$ x1 $\frac{1}{2}$ Angle Iron and fixing the same with 'J' bolts where ever required.

8 450' 2.34 Lbs. 8,424 Lbs.

24. Dismantling the old L.T.

or 76 Cwts.

Switch & Bus.- as per separate Estimate 'a'.

76

25. Providing, steel stair case.- as per separate estimate 'b'

26. Providing & fixing wire netting

Rabbit mesh to windows.- 50 5 8' 2,000
 Arches .. 50/2 22/7 25/4 490
 Windows of L.T.room .. 11 4 5 220
 Arches .. 11X $\frac{1}{2}$ 22/7 16/4 69

T o t a l

2,779

or 3,000 Sqft.

27. Providing R.C.C. slab(as per separate Estimate 'c')

28. Dismantling Cable Duct, Etc. (

-do-

'd')

29. Providing drains leading out burnt out oil. (

-do-

'e')

30. Reconditioning the drains in the rear of Generating Station with cement pointing, Etc.

Lump Sum.

31. Miscellaneous & other unforeseen works.

-do-

C R E D I T:

1. G.I. Sheet of Sizes 300 Nos.
 2. -do- -do- 300 Nps.
 3. T.W. Windows and doors released as per item No.16 4,090 Sqft.

For constructing drain in Transformer Station for leading out oil. 76
(W.O. No. A-37)

Names of materials etc.	No.	L	B	D	Contents.

1. Dismantling the stone masonry & cement concrete including removing the debris by head load to a lead of 500 ft. In L.T. Walls	4'	2'	3'	3'	72
In L.T. walls	4	3'	3½'	2½'	105
In the floor of lean to room	4	12	2	1½	144
In L.T. room Longl. drain	1	112'	1	1	112
Top surface	1	112'	3'	½'	84
In the wall of Transformer bank	5	3	3½	2½	131
In floor -do-	5	8	1½	2½	150
-do- -do-	5	8	1½	1½	90
Ex t r a. ..					12
T o t a l in Cft.					900
2. Fixing lintels & grouting with cement concrete including the rails and angle iron.	13				13 Nos.
3. Constructing drain 12"x12" with cement concrete and cement plaster ½" thick, in L.T. room.	4	18'			72
.. -do- Drain in Transformer	5	20'			100
T o t a l in Rft.					172
4. -do- -do- 9"x9" as per the above.	1	112'			112 Rft.
5. R.C.C. slabs for covering	4	13'	1½'		78
	5	15	1½		113
T o t a l ..					191 Rft.

KAV. YSG.

J. R. Arye
Chief Electrical Engineer.

Chandrasekhar
GENERAL SUPDT: OF GENERATION.

Abstract estimate for the rehabilitation of Top Station at
Sivasamudram.

7A

Names of materials, etc.	Unit	Quantity	Rate			Amount		
			Rs.	A.	P.	Rs.	A.	P.
1. Dismantling the old burnt out mangalore tiled roofing with wooden purlins, rafters and reepers, flat ceiling tiles complete and removing debris over a lead of 200' and lift of 15' including heavy scaffolding.	Sqrs.	36.80	20	0	0	736	0	0
2. Dismantling the G.I. Sheet roofing at a height of 40' and lowering the sheets complete.	Sqrs.	40.30	20	0	0	806	0	0
3. Dismantling the wooden purlins of roof of stores and old lighting arrestor room.	Cft.	160	1	8	0	240	0	0
4. Dismantling the bent and twisted trusses and conveying the same to store yard over a lead of 400'	Each.	5	150	0	0	750	0	0
5. Dismantling the twisted 'I' beams 12"x5" & 12"x6" including breaking masonry at ends and conveying the same to stores over a lead of 400'	Cwt.	147	5	0	0	735	0	0
6. Dismantling the stone masonry in surkhi mortar and C.C. 1:2:4 arches including scaffolding.	Cft.	8116	0	5	0	2,336-0-0	0	0
7) Dismantling brick masonry and removing debris over a lead of 200 feet.	Cft.	1700	0	4	0	425	0	0
8) Dismantling the cement concrete Jack arches.	Cft.	705	0	6	0	264	0	0
9) Dismantling stone slabs including concrete and removal of debris.	Cft.	700	0	2	0	88	0	0
10) Constructing size stone in cement mortar 1:3 including scaffolding at badly cracked portions.	Cft.	1800	0	12	0	1,350	0	0
11) Filling in the opening in the main wall of station (3'diar' & 2' thick) with brick in cement mortar including plastering and chipping the old masonry for bonding.	Each	18	15	0	0	270	0	0
12) Reconditioning the old trusses and bringing them to plumb including grouting.	Each	10	50	0	0	500	0	0

13. Providing and fixing new trusses and hoisting the same.	Each	13	1000	0	0	3,000	0	0
14. Providing & fixing angle Iron purlins with new angle Iron cleats with bolts and Nuts complete	Cwts	175	25	0	0	4,375	0	0
15. Roofing with 24 B.W.G. G.I. sheets with 'J' bolts & G.I. Bolts lead washers, etc., complete with a lap of 3 corrugation at sides at 1' at ends.	Sqrs	109	70	0	0	7,630	0	0
16. Ridging with plain 24 B.W.G. sheet 3' wide with G.I. Bolts lead washers, etc.	Rft.	156	5	0	0	780	0	0
17. Raking the masonry Joints 1" to 1½" deep including high scaffolding.	Sqrs.	~~185~~ 190	4	0	0	~~740~~ 760	0	0
18. Pointing with cement mortar 1:3 including fixing with bricks etc., where ever required and with a lift of 40' for materials.	Sqrs	~~185~~ 190	8	0	0	~~1,480~~ 1,520	0	0
19. Burnt brick in cement mortar 1:6.	Cft.	2000	0	10	0	11,250	0	0
20. Plastering with cement mortar 1:3 ½" to ¾" th.	Sqrs	52	18	0	0	936	0	0
21. Providing S.M. Rail or R.C.C. lintels over openings.	Cft.	200	3	0	0	600	0	0
22. Flooring with R.C.C./including centering and surface & ceiling plastered and tiles cut coloured red complete.	Sqrs.	39	180	0	0	7,020	0	0
23. Flooring with 1½" thick C.C. 1:2:4 over a bed of 6" th. C.C. 1:4:8 and ½" th. cement mortar plaster.	Sqrs.	48	48	0	0	2,304	0	0
24. Removing the damaged flooring tiles and redoing the same with cement mortar coloured red and tiles cut using 1" th. 1:2:4 C.C. wherever required.	Sqrs.	32	30	0	0	960	0	0
25. Chipping the burnt out cement mortar plaster of the ceilings of Jack arches & redoing the same.	Sqrs.	19	20	0	0	380	0	0
26. Providing & fixing R.S.I. beams or R.C.C. beams including hoisting complete	Cwts.	70	22	0	0	1,540	0	0
27. Providing & fixing old windows with shutters, etc., complete.	Sft.	459	1	8	0	688	0	0
28. Reconditioning the existing								

existing windows and fixing complete.	Sft.	622	1	0	0	622	0	0
29. Providing & fixing new T.W. frames with fan lights on top for doors, etc.	Sft.	305	5	0	0	1,525	0	0
30. Relasing T.W. windows and doors of Top Station.	Sft.	607	0	8	0	304	0	0
31. Providing and fixing windows of angle iron 2"x2" with asbestos sheet shutters & flat iron frames including 5/8" iron rods and expanded or welded mesh fixed out sides.	Sft.	512	5	0	0	2,560	0	0
32. Providing & fixing steel framed doors with asbestos shutters and flat iron frames with expanded or welded mesh fixed.	Sft.	174	5	0	0	870	0	0
33. Providing and fixing steel framed door with asbestos and expanded or welded mesh shutter including sliding arrangement.	Sft.	128	8	0	0	1,024	0	0
34. Constructing size stone pillar in cement mortar 1 1/2' x 1 1/2' x 8' including foundation masonry and concrete.	Each	18	60	0	0	1,080	0	0
35. Providing and fixing wooden screen including doors complete.	Sft.	960	2	0	0	1,920	0	0
36. Providing an R.C.C. stairs including hand railing all round the well portion.					L.S.	500	0	0
37. Painting with approved paint 2 coats.	Sqrs.	150.0	7	0	0	1,050	0	0
38. Providing racks of R.C.C. with angle iron and asbestos shutters for records of office.					L.S.	2,500	0	0
39. -do- -do- in stores but with expanded metal or welded metal mesh shutter instead of asbestos.					L.S.	4,500	0	0
40. Providing R.C.C. slabs or angle iron brackets for racks in the narrow room.					L.S.	1,500	0	0
41. Providing & fixing ~~Two~~ iron ladders 8' high.					L.S.	200	0	0
42. Providing & hoisting crane track including crane-girders, Rail, etc., all fixed in position.					L.S.	2,500	0	0
43. Providing wind ties to roof of top station and that of stores and lightning arrester room.					L.S.	3,000	0	0

74

44. Providing a track and hoist pillars at front of stores.	L.S...	1,000. 0 0
45. Flooring of old stores with C.C. 6" thick including excavation and fixing track rails for a width of 20'	L.S.	1,800 0 0
46. Forming road from trolley house to ground floor of Top Station including providing R.C.C. slabs over the pipe lines 1 to 7 where ever these cross the road.	L.S.	3,500 0 0
47. Removing the burnt out debris and conveying it before the commencement of work.	L.S.	2,000 0 0
48. Levelling the ground alround the station and forming.	L.S.	1,000. 0 0
49. Providing an expanded metal or a welded mesh screen including brick in mortar 9" thick 3' high dwarf wall with provision for a counter in the expanded metal screen.	L.S.	2,000 0 0
50. Replacing the burnt out planks on the passage in front of Top Station.	L.S.	1,000. 0 0
51. Washing the walls of stores with soap and removing all smoky surfaces including high scaffolding.	L.S.	500 0 0
52. Miscellaneous & unforeseen works <i>such as replacing broken tiles in the roof of G.S.G room etc.</i>	L.S.	~~2,000~~ 0 0
Contingencies at 5%		82,899 0 0
Petty supervision at 2 1/2%		4,145 0 0
		2,073 0 0
Grand total		89,117 0 0

Credits:-

1. T.W. purlins of sizes	Nos.	41	Scrap	-	-	-
2. -do- -do-	Cft.	100	1 0 0	100	0 0	0
3. G.I. Sheets of Sizes	Each	100	1 0 0	100	0 0	0
4. Asbestos sheets of sizes	Each	25	Scrap	-	-	-
5. Expanded metal 1/2" & 3/4"	Sft.	1500	-do-	-	-	-
6. T.W. rafters of sizes	Nos.	12	-do-	-	-	-
7. I beam 12"x5"	Cwts.	120		490	0 0	0
8. -do- 8"x4"	Cwts.	11.75		150	0 0	0
9. Steel trusses 30' span	Each	2	50 0 0	100	0 0	0

Total amount of the estimate		Rs.89,117	0	0
Less credits	..	1,378	0	0

Nett amount of the estimate	..	Rs.87,739	0	0

BKR.YSG.

GENERAL SUPDT: OF GENERATION.

J. M. Carey
Genl. Electrical Engr.

Detailed Estimate for the rehabilitation of Top Station, Sivasamudram.

Details of Work	No.	Dimensions in feet			Area or cubic contents and Total
		L	B	D	
1. Dismantling the old burnt out mangalore tiled roofing with wooden purlins, rafter and reepers flat ceiling tiles, etc., complete and removing debris over a lead of 200' & lift of 15' including heavy scaffolding.	2	80	23		3680 Sft. or 36.80 Sqrs.
2. Dismantling the G.I. Sheet roofing at a height of 40' and lowering the sheets, etc., complete.	1 1	53 110	20 27		1060 2970 4030 or 40.30 Sqrs.
3. Dismantling the wooden purlins of the roof of stores and old lighting arrester rooms.	15 5	110 53	3" 3"	4" 4"	137.5 22.1 159.6 Cft. Say 160 Cft.
4. Dismantling the bent twisted trusses and conveying the same to store yard over a lead of 400'					1. Item.
5. Dismantling the twisted I beams 12" x 5" & 12" x 6" including breaking masonry at either ends and conveying the same to stores over a lead of 400'					
12"x5"x20' long		200 x 32			6400 Lbs.
12"x6" in pieces		240 x 42			10080 Lbs.
					16480 or 147 Cwts.
6. Dismantling the stone masonry and cement concrete arches, including scaffolding of the badly cracked rear portion of Top Station.					
Work shop long wall	2	30	1 1/2	9	810
End wall	1	25 1/2	1 1/2	9	341
Gables	1 x 1/2	25 1/2	1 1/2	9	170
Long walls (super structure)	2	31	2 1/2	26	3627
End walls	1 x 1/2	25 1/2	2 1/2	26	1477
Binding walls	2	18	1 1/2	1	54
Longl. walls of Top Station.	2	100	1 1/2	1	300
South wall	1	55	2	2	220
-do- -do-	1	50	1 1/2	4	350
-do- -do-	1	50	1 1/2	1 1/2	38
-do- -do-	1	32	1 1/2	8	448
East cross end wall	1	20	2	4	160
South wall ground floor	1	75	1	9	675
Extras here and there					84
Total					8754 Cft.

Deduct for:-

Big door-	1	10	2 1/2	14	315
Window openings	2	3 1/2	2 1/2	5	79
-do- -do-	4	4	2 1/2	6	216
Semicircular opening	2x 1/2	22x2x2x2 1/2			28
		7			
					638 Cft.
Balance dismantling					8116 Cft.

7. Dismantling brick masonry & removing debris.-

L.T.Switch wall in ground floor.	1	8	1 1/2	6	24
-do- -do-	4	8 1/2	1 1/2	6	102
Telephone booth walls	1	14	1 1/2	8	84
Long wall	1	80	1 1/2	8	960
Cross wall	2	17	1 1/2	8	408
-do- -do-	1	12	1.1/8	9	122
T o t a l					1700 Cft.

8. Dismantling the cement concrete

Jack arches of the floor of office	1	12	6	1 1/2	90
-do- -do-	1	11	6	1	66
-do- -do-	2	11	11 1/2	1	259
-do- -do-	1	10	11	1	110
-do- -do-	1	18	10	1	180
					705 Cft.

9. Dismantling stone slabs including concrete & removal of debris.

1	70	10	1	1	700 Cft.
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10. Constructing size stone in cement mortar 1:3 including scaffolding ground floor.-

Longl. main wall	1	70	1	8	560
North wall Top portion	1	60	2	2	240
South main wall	1	50	1 1/2	4	350
-do- -do-	1	32	1 1/2	8	448
Pillaster projections	1	50	1 1/2	1 1/2	38
East end wall	1	20	2	3	120
Extra for gap, etc.					44
T o t a l					1800 Cft.

11. Filling the opening in the wall of old wall entrances with brick in cement mortar 1:6 including plastering complete.

No.18

12. Reconditioning the old trusses and bringing them to plumb and grouting.

No. 3.

13. Providing & fixing new trusses & bracing the same

1. Item.

14. Providing and fixing angle iron purlins with new angle iron cleats including drilling holes, etc., complete.-

Formation roof 'L' Iron					
3" x 3" x 5/16"	12	156	x 6.1	Lbs.	11,419
2 1/2" x 2 1/2" x 1/2"	7	18	x 4		504
Of stores 3" x 3" x 5/16"	7	110	x 6.1		4,697
-do- -do-	6	53	x 6.1		1,940
2 1/2" x 2 1/2" x 1/2"	10	18	x 4		720
Extras for bolts Nuts, Etc.					320

19,600

or 175 Cwts

14. Providing & fixing new
trusses and hoisting the
same.

~~1-Item~~

15. Roofing with 24 B.W.G. G.I.
sheets with 'J' Bolts, G.I.
Bolts lead washers, etc.,
complete
Of stores
-do-

2	156	22	6864
1	110	27	2970
1	53	20	1060

Total .. 10894
or 109.00 Sqrs.

16. Ridging with plain G.I.
sheets 3' wide including
bolts & nuts & lead washers

1	156	156 Rft.
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17. Raking the masonry joints 1"
to 1½" deep including high
scaffolding.-

Outside East End wall	1	36½	39	1433
-do-	1x½	36½	12	221
Inside, ground floor.-				
East End wall	1	30½	8	246
South Longl. wall	1	86½	8	692
-do-	1	152	8	1216
Office floor Longl. wall	2	153	32	9792
End walls	2	33	32	2112
Gables	2x½	33	11	363
A.S.O.L. room	1	60	30	1800
-do-adjacent room	1	67	30	2010

Total .. 19885

Deduct for.-

Opening in east wall	2	8	8	128
-do-	2	8	9	144
Windows ground floor	4	3½	3	70
Doors	2	3½	3	46
Opening in office of G.S.G.	4	6	10½	258 S-16
For arch	4	22/7	3/2	57 19
Windows	9	6	2	432 864
Arches over windows	9x½	22/7	3	127 43
Door front	1	7	10½	72
-do- in A.S.O.L.	2	3½	6½	46

Total .. 1380 1948
Balance .. 18505 179 37
495

Extras here and there

Total 19000 18432
or 190.0 Sqrs.

18. Pointing with cement mortar
including a lift of 40' for
conveying materials.
As per item 17

185.00
190.0 Sqrs.

19. Burnt brick in cement mortar
1:6

Openings in top station	4	5½	2	14	588
Below window in East wall	1	8½	2	3	50
For windows	1	4	2	5	40
-do-	4	32	2	2	128
In A.S.O.L. room	1	4	2	10	90
Gross walls in ground floor	1	30½	1.1/8	8	277
-do-	1	13½	1.1/8	8	120
-do--	1	10	1.1/8	8	99
At the top of walls	2	153	1½	1	459
Pillasters in ground floor	2	2½	2	8	72
For opening in G.S.G. room	2	6	2	3	72
Extras					205

Total 2191
2200

Deduct for:-

Door in cross walls	1	8	1.1/8	8	72
-do-	2	5	1.1/8	7	79
Vent in A.S.O.L. room	4	4	2	2	64

215

1985 1976
or 2000 cft.

20. Plastering with cement mortar

1:3, 1/2" to 1/4" -

Southern side of narrow
room in ground floor

2 66 8 1056

Ceiling

1 66 13.1/3 880

Northern side -do-

3 66 8 1584

Ceiling

1 66 11 726

-do-

1 66 3 215

Cross walls

2 30 8 492

-do-

2 13.1/3 8 213

-do-

2 11 8 176

Opening in G.S.G. room

2x2 6 3 72

5414

Deduct for Doors

1 6 7 42

Windows

3 3 5 53

Door

1 4 7 28

-do-

2 8 8 128

-do-

2x2 5 7 140

391

Balance plastering

5023

Extra s

177

Balance 52.00 Sqrs.

21. Providing S.M. rail or R.C.C.

Lintels over openings

4 5 3 1 60

Over windows

1 10 2 1 23

Door

1 7 1.1/8 1 8

-do-

1 10 1.1/8 1 11

-do-

8 5 2 1 80

Over windows

182 Cft

or 200 Cft.

22. Flooring with R.C.C. includ-

ing centering complete &

6" thick coloured red and

tiles cut including plaster-

ing the ceiling

1 83 33 2739

-do-

1 14 5 70

A.S.O.L. room

2 22 10 440

Adjacent room

2 24 10 480

Jack arch terrace

1 15 5 86

3815

or 39.0 Sqrs

23. Flooring with 1 1/2" thick cement

concrete 1:2:4 on a bed of

6" C.C. 1:4:8 & 1/2" plaster

complete - Ground floor

1 65 11 715

1 65 3 211

1 88 31 2728

Extras	1	64	13.1/3	854
				292
			Total	4800
				or 48.00 Sqrs
24. Removing the damaged flooring - tiles and redoing the floor - with 1/2" thick cement plaster - coloured red & tiles cut on 1" thick C.C. 1:2:4	1	50	16	800
	1	70	33	2310
Extras				90
				3200 Sft.
				or 32.00 Sqrs
25. Chipping the burnt out sur- - face of ceiling of Jack - arch roof and redoing the - same with cement mortar 1/2" thick.	1	65	11	715
	1	65	3 1/2	211
	1	64	13.1/3	854
Extras				120
				1900
				or 19.00 Sqrs
26. Providing & fixing R.S. - I beam including hoisting complete.- R.S.J. 8"x4"x18 Lbs.	9	34	18 Lbs.	5508
6"x3"x12 Lbs.	16	12	12	2304
				7812
			Total	70 Cwts
27. Providing & fixing old win- - dows with shutters, etc., complete	4	5	8	160
Semicircular portion	4x 1/2	3.1/7	25/4	39
Window in office	1	8	8 1/2	66
In A.S.O.L. room	4	3 1/2	5	70
For G.S. G.room 2 of 6x8+3				124
				459 Sft.
28. Reconditioning the exist- - ing ones and fixed com- plete	4	6	8	192
Arch portion.	6	6	8	288
	10x 1/2	3.1/7	36/4	142
			Total	622 Sft.
29. Providing & fixing new T.W. - frames with door shutters - including all fixtures complete	2	6	10 1/2	129
Semicircular opening	2x 1/2	3.1/7	36/4	28
For ventilators	4	4	2	32
For windows	4	3 1/2	5	70
Doors for A.S.O.L. & other - adjacent room.	2	3 1/2	6 1/2	46
				305 Sft.
30. Releasing the T.W. windows - and doors of top station. In the store room	4	3 1/2	5	70
Windows	4	6	8	192

Semicircular opening	4x $\frac{1}{2}$	3.1/7	$\frac{6}{4}$ ²	56
Doors big	2	8 $\frac{1}{2}$	11	187
Arches	2x $\frac{1}{2}$	3.1/7	(8 $\frac{1}{2}$) ²	56
Doors	2	3 $\frac{1}{2}$	6 $\frac{1}{2}$	46

				607 Sft.

1. Providing windows of angle iron 2"x2"x $\frac{1}{4}$ " frame & 5/8" iron bar with asbestos sheet shutter complete including expanded metal.-

Ground floor	15	3 $\frac{1}{2}$	5	263
-do-	4	6	8	192
For arches	4x $\frac{1}{2}$	3.1/7	36/4	57

Total				512 Sft.

32. Providing steel framed doors with asbestos shutters with expanded metal or weld mesh with all fixtures complete

	1	6	7	42
	2	3 $\frac{1}{2}$	6 $\frac{1}{2}$	46
	1	2 $\frac{1}{2}$	6 $\frac{1}{2}$	16
	2	5	7	70

Total				174 Sft.

33. Providing & fixing steel framed door with asbestos sheet shutters with expanded metal including sliding arrangement

	2	8	8	128 Sft.
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34. Constructing *Size Stone filler in cement* mortar 1:3, 1 $\frac{1}{2}$ 'x1 $\frac{1}{2}$ 'x8' including masonry and concrete in foundation complete

	18	No.18		
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35. Providing & fixing wooden screen including doors complete

	3	16	20	960 Sft.
--	---	----	----	----------

36. Providing an R.C.C.stairs in the top station including hand railing for well portion.

Item 1.

37. Painting with approved paint 2 coats.-

G.S.G. room	2	50	16	1600
Ceiling	1	50	16	800
End walls	2	16	16	512
Window office	4x2	5	8	320
arches	4x2/2	22/7	$\frac{52}{4}$	78
Windows	2x16	6	8	1536
Arches	32/2	22/7	$\frac{62}{4}$	453
Window in office	1x2	8	8 $\frac{1}{4}$	132
Main door	1x2	7	10 $\frac{1}{4}$	144
Windows	23x2	3 $\frac{1}{2}$	5	805
doors	2x2	3 $\frac{1}{2}$	6 $\frac{1}{2}$	91
Big doors	2x2	8 $\frac{1}{2}$	11	374
Arches	2x2x $\frac{1}{2}$	22/7	(8 $\frac{1}{2}$) ² 4	112

Add 2 area of 32 & 33 items			302x2	604
Trusses & purlins in main station & stores	2	156	22	6864

82
1/p

E x t r a

555

~~55000~~ 14980
 or 150.00 Sqrs.

38. Providing racks for records in, office & for old records room. 1 Item.
39. -do- -do- in stores. 1 Item.
40. Providing R.C.C. Slabs and angle iron brackets in the narrow room. 1 Item.
41. Providing & fixing two iron ladders for access to old records. 1 Item.
42. Providing hoisting crane girders including grouting and fixing 60 lb. rails for track. 1 Item.
43. Providing wind ties to roof including fixing and repairs to roof both for main station, stores & A.S.O.L. room roofs including brackets where ever required. 1 Item.
44. Providing a track & a hoist at front of stores. 1 Item.
45. Flooring of old stores with C.C. 6" thick including excavation, etc., complete and fixing track rails. 1 Item.
46. Forming road from trolley house to ground floor of Top station including providing necessary strengthening at the H.P.P. crossings. 1 Item.
47. Removing the burnt out debris and conveying it before the commencement of work. 1 Item.
48. Levelling ground alround the station and forming. 1 Item.
49. Providing an expanded metal or welded mesh screen including a dwarf wall 3' high of brick in cement mortar, plastering, etc., complete & providing a booth for cash. 1 Item.
50. Replacing the burnt planks of the passage in front of top station with 2" thick teak wood planks.
51. Washing the walls of stores with ~~soap~~ Soap and removing all charred surfaces including scaffolding. 1 Item.

P.T.O.

52. Miscellaneous and unforeseen works *Such as replacing tiles in the G.S.G. room.*

L. S.

C r e d i t s:

1. T.W. purlins of sizes.	Nos.	41
2. -do- -do-	Cft.	100
3. G.I. sheets of sizes.	Each.	100
4. Asbestos sheets of sizes	Each	25
5. Expanded metal $\frac{1}{2}$ " & $\frac{3}{4}$ "	Sft.	1500
6. T.W. rafters of sizes	Nos	12
7. 'I' beam 12" x 5"	Cwts.	120
8. -do- 8" x 4"	Cwts	11.75
9. Steel trusses 30' span	Each.	2
10. Miscellaneous materials such as tower bolts, etc.	One lot.	
11. Iron scrap	Cwt.	35.75
12. T.W. windows and doors.	Sft.	367

BKR.YSG.

Crusby 12/5
GENERAL SUPDT: OF GENERATION.

M. R. Hays
Chief Electrical Engineer.

**Estimates for rehabilitation works of Sivasamudram plant Construction
Establishment Expenditure.**

I. Executive Establishment for construction:-

<u>Designation & grade.</u>	<u>No.</u>	<u>Average Cost.</u>	
a) Hydraulic Section:			
1. Station Superintendent, 200-25-350	1	298.1/3	G.O.No. EDS.849-51 dated 12.9.44 CEE's No.9065-67 dated 24-10-44.
2. Senior Operators, 125-10-175	2	316.2/3	
3. Asst. Operators 80-5-125	2	216	
		831 x 6 =	Rs.4,986.
b) Electrical Section.			
4. Junior Engineers, 200-20-300	2	533.1/3	
5. Senior Operators 125-10-175	3	475	
6. Asst. Operators 80-5-125	3	324	
		1332.1/3 x 6 =	7,994
7. Junior Engineer 200-20-300	1	266.2/3	
8. Senior Operators 125-10-175	2	316.2/3	
		583.1/3 x 3 =	1,749
c) Laboratory section:			
9. Asst. Govt. Elec. Inspector 200-20-300	1	266.2/3	
10. Sr. Laboratory Assistants 80-5-125	4	432	
11. Jr. Laboratory Assistants 35-5/2-80	4	232	
		930.2/3 x 6 =	Rs.5,584

Total. Rs.20,314

Add 10% Construction Allowance.

2,031

d) Construction allowance for the existing permanent officers at Sivasamudram:-

officers at Sivasamudram:-		Construction
<u>Designation.</u>	<u>Salary p.m.</u>	<u>Allowance.</u>
1. Genl. Supdt. of Generation	Rs.850/-	Rs.85
2. Hydraulic Engineer	Rs.300/-	Rs.30
3. Electrical Engineer	Rs.300/-	Rs.30
4. Station Superintendent	Rs.280/-	Rs.28
		Rs.173 x 6 = 1,038

II. Ministerial establishment.

<u>Designation.</u>	<u>Grade.</u>	<u>No.</u>	<u>Financial average.</u>	<u>Cost per month.</u>	<u>Re-marks</u>
1. First Grade Accounts Clerks	40-3-70-5-100	3	74	222	
2. Time Keeper	30-3-45	2	41 1/2	82 1/2	
3. Miscellaneous Clerks	30-3-45	4	41 1/2	165	
4. Ledger Clerks	do	4	41 1/2	165	
5. Store Keeper II-Class	30-3-60	2	50	100	
6. Stenographer	30-3-60	1	50	50	
7. Typist	30-3-45	1	41 1/2	41 1/2	
8. Store Labourers	Fixed Rs.25	20	25	500	
9. Store Labourers	Rs.20	30	20	600	
	Total.	67		1,925 3/4 x 18 =	

Rs.34,664

Abstract.

I. Executive Establishment for construction	-	Rs.25,383
II. Ministerial Establishment for 18 months	-	Rs.34,664
III. Dearness allowance for above	-	Rs.12,540
Total.		Rs.70,587

MSS-GH.

General Supdt. of Generation.

Report to accompany the estimate for Rehabilitation of Sivasamudram Station.
=====

An unprecedented disaster overtook Sivasamudram Power House suddenly on the evening of the 19th May 1944. A twin stroke of lightning discharged itself on the roof of the Generating Station thus spreading its wrath in setting a flame the entire roof of the 460 feet long Generating Station wooden coiling and also all the power and control cables and some of the Generators. The sudden bursting of this equipment and the roof into flames threw the handful of men that were in attendance at the time for normal maintenance into confusion and with the greatest difficulty they escaped from the burning building alive. Meanwhile, the flames consumed most of the Generators and all the power and control cables; except for the bare copper and iron nothing was left. The flames spread from the Generating Station across to into the Transformer Station damaging the Switchboard wiring and the instruments and all the Low Tension Switchgear. All attempts by the men that gathered subsequent to the incident to control the fire were fruitless and the fire spread violently causing widespread damage.

Immediately after the occurrence the Station Operators de-energised the plant and began fighting the fire fruitlessly. The fire consumed nearly 30,000 feet of power cable varying in size from 500,000 C.M. to a million and half C.M. and nearly 60,000 ft. of 4 conductor V.I.R. Control Cables and all the Low Tension Switchgear and all the wiring of the Switchboard and many of the instruments. The brighter side of the picture was that four of the large Generators were damaged to a small extent and the fire which reached the Transformer Bay got extinguished by the time it reached there. The wooden stair-cases in the Transformer Station caught flames and in their furious burning melted down the solder in all the High Tension Buses, shattered some of the High Tension Insulators, but luckily the oil in the Oil Circuit Breakers did not catch flames. Due to the pluck of the men in attendance the oil in the High Tension Transformers was drained off into the river thus avoiding complete destruction of the Station. Probably this would have put the Station out of commission for not less than 36-48 months.

The estimate provides for rewinding all the Generators that were damaged and repairs to the Generators that were slightly damaged, overhaul and replacement of all white metal and brass portions of the Hydraulic portion of the equipment which had been melted and badly scoured. It provides for (1) replacement of varnished cambric cables by lead covered paper insulated High Tension Cables of appropriate pot heads and new type of high rupturing capacity Oil Circuit Breakers, (2) replacement of oil in the Transformers by fresh oil and overhauling of the Oil Circuit Breakers, (3) replacement of all damaged High Tension Bushings and re-conditioning of the Station, (4) complete replacement of the Switchboard with new wiring, and (5) replacement of all the damaged instruments and instrument Transformers.

The provisions made are meant to cover such of the repairs that were conducted locally and replacement of parts that could not be made locally and which had to be obtained from foreign countries. The damage was originally estimated to cost about Rs25 lakhs, but on a careful consideration and by extreme economy exercised in the works that were carried out, the estimate has been reduced to Rs. 18,29,000/-

In this connection it may be mentioned that this Rehabilitation has brought about the execution of the following two works which necessarily had to be done during the subsequent months, viz.

replacement of the low rupturing capacity Low Tension Oil Circuit Breakers that were installed several years ago by high rupturing capacity ones necessitated by the proposed tieing in of Sivasamudra and Shimshapura with Jog costing about Rs 2½ lakhs.

The Regulators that were in service from a very long time were giving considerable trouble and were causing anxiety on various important occasions. Quotations for replacing these Regulators had been called for and the estimates are under submission.

The oil in the Transformers had developed acidity having been in service for the last nearly 20 years. The question of replacement was under consideration when the accident occurred and now all the oil in the Transformers has been replaced by good oil which is bound to serve us for several years to come.

Taking into effect the value of the above works which necessarily had to be done in the course of 1944-45 we may safely say that the actual cost incurred for Rehabilitation due to the accident is Rs 13 lakhs. Taking the magnitude of the accident into consideration I venture to state that the expenditure incurred is small for which we have to be thankful to Almighty God for having saved from the fire some essential equipment, the cost of replacement of which would not only have been heavy but would have kept the Station idle and unserviceable for several years.

In this connection it may not be out of place if I mention that the damage indicated to most sanguine observers that the Station could not be put back into commission earlier than six months. Engineers who visited the place were of the same opinion. But the staff of the Department deputed for the work set about the business of Rehabilitation in such earnest that with the help of the various organisations who voluntarily offered the same, it was possible to service the Station partially within about five weeks from the date of the accident, and within eight weeks the Station was in a position to carry a load of nearly 30,000 K.W. The temporary repairs that were carried out on an emergent basis have stood very well for the past year and they are gradually being replaced by permanent repairs as and when material is received from foreign countries.

Further, the estimate provides for a network of ground wires and the roof of the Stations - both Generating and Transformer, with the establishment of best grounds that could be secured and replacement of all possible inflammable material in the Station like wood, etc., with non-inflammable material as well as lay-out of the power cables as a modern Station with fire segregation compartments to localise the fire in case one to occur.

Further, the estimate provides for also installation of Muleifire type of fire protection. The Generators are also being equipped with travelling wave surge ~~observers~~ ^{protectors} to prevent damage to travelling waves by lightning. In short, the Station, after all the works contemplated in the estimate are completed, will have been overhauled and made an up-to-date Power House with foreseeable adequate fire protective equipment.

MH-DMJ.
13-10-45.

H. Lingayat
Chief Electrical Engineer
to the Govt. of Mysore.

Report to accompany the estimate for rehabilitation of Sivasa mudram Station.

=====

An unprecedented disaster overtook Sivasa mudram Power House suddenly on the evening of the 19th May 1944. A twin stroke of lightning discharged itself on the roof of the Generating Station spreading its wrath in setting a flame to the entire roof of the 460 feet long Generating Station wooden ceiling and also all the power and control cables and some of the Generators. The sudden bursting of this equipment and the roof into flames threw the handful of men that were in attendance at the time for normal maintenance into confusion and with the greatest difficulty they escaped from the burning building alive. Meanwhile, the flames consumed most of the Generators and all the power and control cables; except for the bare copper and iron nothing was left. The flames spread from the Generating Station down to into the Transformer Station damaging the Switchboard, wiring and the instruments and all the Low Tension Switchgear. All attempts by the men that gathered subsequent to the incident to control the fire were fruitless and the fire spread violently causing widespread damage.

Immediately after the occurrence the Station Operators de-energised the plant and began fighting the fire fruitlessly. The fire consumed nearly 30,000 feet of power cable varying in size from 500,000 C.M. to a million and half C.M. and nearly 60,000 ft. of 4 conductor V.I.S. Control Cables and all the Low Tension Switchgear and all the wiring of the Switchboard and many of the instruments. The brighter side of the picture was that four of the large Generators were damaged to a small extent and the fire which reached the Transformer Bay got extinguished before it reached there. The wooden stair-cases in the Transformer Station caught flames and in their furious burning melted down the solder in all the High Tension Fuses, shattered some of the High Tension Insulators, but luckily the oil in the Oil Circuit Breakers did not catch flames. Due to the pluck of the men in attendance the oil in the High Tension Transformers was drained off into the river thus avoiding complete destruction of the station. Probably this would have put the Station out of commission for not less than 36-48 months.

The estimate provides for rewinding all the Generators that were damaged and repairs to the Generators that were slightly damaged, overhaul and replacement of all white metal and brass portions of the Hydraulic portion of the equipment which had been melted and badly scoured. It provides for (1) replacement of varnished cambric cables by lead covered paper insulated High Tension Cables with appropriate pot heads and new type of high rupturing capacity Oil Circuit Breakers, (2) replacement of oil in the Transformers by fresh oil and overhauling of the Oil Circuit Breakers, (3) replacement of all damaged High Tension Bushings and re-conditioning of the Station, (4) complete replacement of the Switchboard with new wiring, and (5) replacement of all the damaged instruments and instrument Transformers.

The provisions made are meant to cover most of the repairs that were conducted locally and replacement of parts that could not be made locally and which had to be obtained from foreign countries. The damage was originally estimated to cost about Rs. 25 lakhs, but on a careful consideration and by extreme economy exercised in the works that were carried out, the estimate has been reduced to Rs. 18,29,000/-

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[Signature]
Chief Electrical Engineer
to the Govt. of Mysore.

NH-DIJ.
13-10-45.

G. R. S. App. F VI—G. 2]

SUBJECT..... Rehabilitation of Sivarama Narayana
..... stn. Diary No. of letter replied to 989

General and Revenue Secretariat

the

19

Section

ElectFile No. 318-45Serial No. 2Proceedings of the Government of
His Highness the Maharaja of Mysore.

Read—

Date of issue..... 30.X 1946

Signed by.....

May this be—

- (i) printed?
- (ii) treated as a standing order?
- (iii) published in the Gazette,
English Part?
- (iv) translated?
- (v) placed at the disposal of the Press?
- (vi) published in the Gazette,
Kannada Part?

Letter : 16658 dated
the 18th Dec. 1945 from
the Chief Electrical
Engineer submitting for
sanction estimates
for Rs. 18,100/- (Rupees
eighteen ~~thousand~~ lacks and
~~Order thereon.~~ Twenty one thousand
only) for the rehabilitation
of Sivarama Narayana
station, the cost of the
works being charged to
"Depreciation Fund works"

29/11/3

Order No. ED-10000000000000000000

Sanctus.

Ky 28 $\frac{10}{40}$

The return to work
 schedule Sept.
 1966

9

420

The 10.30 (with a copy of the estimate) is

Five in the afternoon.

The Auditor, Rice & Co. (with a copy of the estimate)

List of Enclosures Copies of
estimates to C. E. E. and
A. B. D.

Copied by Mr. A. Narjunda Mudaliar
Examined by